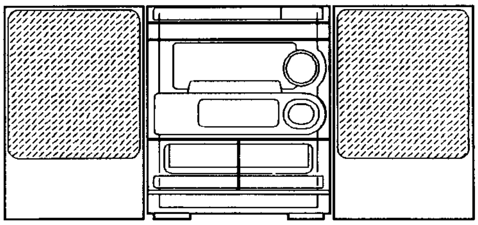
aiwa

aiwa
SERVICE

NSX-AV75
NSX-NMT50
NSX-NMT55



COMPACT DISC STEREO
CASSETTE RECEIVER

- BASIC TAPE MECHANISM : 2ZM-3MK2 PR4NM
- BASIC CD MECHANISM : 4ZG–1 Z1DNM / Z1MD
- TYPE : EZ,K,LH,HR<AV75>,
  U<NMT50/55>

SYSTEM	SUB WOOFER	CD – CASSEIVER	SPEAKER
NSX–AV75 (TYPE : EZ,K,LH,HR)	NIL	CX – NAV75	SX – NAV75 SX– CR423
NSX–NMT50 (TYPE : U)	TS-WS35 (OPTIONAL)	CX – NMT50	SX – NA54 SX – R210 SX– C400
NSX–NMT55 (TYPE : U)	TS-WS35		

- If requiring information about the CD mechanism, see Service Manual of 4ZG-1, S/M Code No. 09-974-187-50T.
- If requiring information about the Sub woofer, see Service Manual of TS-WS35, S/M Code No. 09-976-204-00I.

SERVICE MANUAL

S/M Code No. 09–976–188–4FE

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SPECIFICATIONS (U,LH,HR)

<FM tuner section>	
Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	13.2 dBf
Antenna terminals	75 ohms (unbalanced)
<AM/MW tuner section>	
Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna
<SW tuner section>	HR :
Tuning range	5.900 MHz to 17.900 MHz
Antenna	Wire antenna
<Amplifier section>	
Power output	**Front** U : 60 W + 60 W (50 Hz – 20 kHz, THD less than 1%, 6 ohms) LH,HR : Rated : 75 W + 75 W (6 ohms, T.H.D. 1 %, 1 kHz) Reference : 100 W + 100 W (6 ohms, T.H.D. 10 %, 1 kHz) **Rear (Surround)** U : 10 W + 10 W (1 kHz, THD less than 1%, 16 ohms) LH,HR : Rated :10 W + 10 W (1 kHz, T.H.D 1%,16 ohms) Reference :12.5 W + 12.5 W (1 kHz, T.H.D.10%,16 ohms) **Center** U : 20 W (1 kHz, THD less than 1%, 8 ohms) LH,HR : Rated : 20 W (1 kHz, T.H.D. 1%,8 ohms) Reference : 25 W (1 kHz, T.H.D. 10%,8 ohms)
Total harmonic distortion	U : 0.05 % (50 W, 1 kHz, 6 ohms, DIN AUDIO) LH,HR : 0.05 % (60 W, 1 kHz, 6 ohms, DIN AUDIO)
Inputs	U : VIDEO/AUX : 150 mV (adjustable) MD : 150 mV (adjustable) MIC 1, MIC 2 : 1 mV (10 kohms) LH,HR : VIDEO /AUX : 210 mV (adjustable) MD : 210 mV (adjustable) MIC 1, MIC 2 : 1.4 mV (10 kohms)
Outputs	LINE OUT : 200 m V U : SUPER WOOFER : 1.9 V LH,HR : SUPER WOOFER : 2.1 V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS : accept speakers of 16 ohms or more CENTER SPEAKERS : accept speakers of 8 ohms or more PHONES (stereo jack) : accepts headphones of 32 ohms or more

<Cassette deck section>	
Track format	4 tracks, 2 channels stereo
Frequency response	CrO2 tape : 50 Hz - 16000 Hz Normal tape : 50 Hz -15000 Hz
Recording system	AC bias
Heads	Deck 1 : Playback head x 1 Deck 2 : Recording/playback/ erase head x 1
<Compact disc player section>	
Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable
<Speaker system SX–NA54>	U :
Cabinet type	3 way, bass reflex (magnetic shielded type)
Speakers	Woofer : 160 mm ($6^{3}/_{8}$ in.) cone type Tweeter : 80 mm ($3^{1}/_{4}$ in.) cone type Super tweeter : 20 mm ($^{13}/_{16}$ in.) ceramic type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	243 x 304 x 227 mm ($9^{5}/_{8}$ x 12 x 9 in.)
Weight	3.3 kg (7 lbs 4 oz.)
<Speaker system SX–NAV75>	LH,HR :
Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Woofer : 160 mm cone type Tweeter : 60 mm cone type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	235 x 304 x 250 mm
Weight	4.2 kg
<General>	
Power requirements	U : 120 V AC, 60Hz LH,HR : 120 V/ 220 – 230V / 240 V AC, switchable ,50 / 60 Hz
Power consumption	U : 120 W LH,HR : 160 W
Dimensions of main unit (W x H x D)	260 x 309 x 346 mm ($10^{1}/_{4}$ x $12^{1}/_{4}$ x $13^{5}/_{8}$ in.)
Weight of main unit	U : 7.5 kg (16 lbs 9 oz) LH,HR : 8.2kg

Design and specifications are subject to change without notice.

- The word "BBE"and the "BBE symbol" are trademarks of BBE Sound, Inc.
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- Manufactured under license from Dolby Laboratories Licensing Corporation.
  "DOLBY" and "PRO LOGIC" are trademarks of Dolby Laboratories Licensing Corporation.

SPECIFICATIONS (EZ,K)

<FM Tuner section>

Tuning range	87.5 MHz to 108 MHz
Usable sensitivity (IHF)	16.8 dBf
Antenna terminals	75 ohms (unbalanced)

<MW Tuner section>

Tuning range	531 kHz to 1602 kHz (9 kHz step) 530 kHz to 1710 kHz (10 kHz step)
Usable sensitivity	350 µV/m
Antenna	Loop antenna

<LW Tuner section>

Tuning range	144 kHz ~ 290 kHz
Usable sensitivity	1400 µV/m
Antenna	Loop antenna

<Amplifier section>

Power output	**Front** Rated : 60 W + 60 W (6 ohms, T.H.D. 1 %, 1 kHz/DIN 45500) Reference : 80 W + 80 W (6 ohms, T.H.D. 10 %, 1 kHz/DIN 45324) EZ : DIN MUSIC POWER:150 W + 150 W **Surround (Rear)** EZ.K : Rated : 10 W + 10 W (16 ohms, T.H.D.1% 1kHz/DIN 45500) Reference : 12.5 W + 12.5 W (16 ohms, T.H.D. 10%, 1kHz/DIN 45324) **Center** Rated : 20 W (8 ohms, T.H.D. 1% 1 kHz/DIN 45500) Reference : 25 W (8 ohms, T.H.D 10%, 1 kHz/DIN 45324) EZ : DIN MUSIC POWER: 50 W
Total harmonic distortion	0.05 % (55 W, 1 kHz, 6 ohms, DIN AUDIO)
Inputs	VIDEO/AUX : 150 mV (adjustable) MD : 150 mV (adjustable) MIC 1, MIC 2 : 1 mV (10 kohms)
Outputs	LINE OUT : 200 m V SPEAKERS: accept speakers of 6 ohms or more SURROUND SPEAKERS : accept speakers of 16 ohms or more CENTER SPEAKERS : accept speakers of 8 ohms or more PHONES (stereo jack) : accepts headphones of 32 ohms or more

<Cassette deck section>

Track format	4 tracks, 2 channels stereo
Frequency response	CrO2 tape : 50 Hz - 16000 Hz Normal tape : 50 Hz -15000 Hz
Recording system	AC bias
Heads	Deck 1 : Playback head x 1 Deck 2 : Recording/playback/ erase head x 1

<Compact disc player section>

Laser	Semiconductor laser (λ =780 nm)
D-A converter	1 bit dual
Signal-to-noise ratio	85 dB (1 kHz, 0 dB)
Harmonic distortion	0.05% (1 kHz, 0 dB)
Wow and flutter	Unmeasurable

<Speaker system SX–NAV75>

Cabinet type	2 way, bass reflex (magnetic shielded type)
Speakers	Woofer : 160 mm cone type Tweeter : 60 mm cone type
Impedance	6 ohms
Output sound pressure level	87 dB/W/m
Dimensions (W x H x D)	235 x 304 x 250 mm
Weight	4.2 kg

<General>

Power requirements	230 V AC, 50Hz
Power consumption	160 W
Dimensions of main unit (W x H x D)	260 x 309 x 363 mm
Weight of main unit	8.2 kg

- Design and specifications are subject to change without notice.
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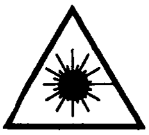
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid exposure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.

The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

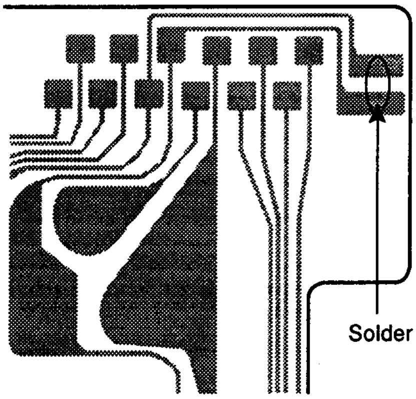
Precaution to replace Optical block

(KSS – 213B)

Body or clothes electrostatic potential could ruin laser diode in the optical block. Be sure ground body and workbench, and use care the clothes do not touch the diode.

1) After the connection, remove solder shown in figure below.

PICK-UP Assy P.C.B



ELECTRICAL MAIN PARTS LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
IC			
	87-NF4-642-010		IC,LC866548V-5E54
	87-A20-501-040		C-IC,BA7762FS<EXP EZ,K>
	87-A20-083-010		IC,BA3835S
	87-A20-450-040		C-IC,BH3864F
	87-A20-056-010		IC,BA3880S
	87-A20-456-040		C-IC,BH3810FS
	87-017-888-080		C-IC,NJM4558MD
	86-NFZ-655-010		IC,LC72131D(Z)
	87-A20-438-010		IC,LA1837
	87-020-454-010		IC,DN6851
	87-070-289-040		C-IC,BU2092F
	87-A20-355-010		IC,CXA1553P<EZ,K>
	87-A20-455-010		IC,HA12211<EZ,K>
	87-A20-440-040		IC,BU1920FS<EZ>
	87-070-083-010		IC,GPIU281X
	87-A20-453-010		C-IC,NJW1102B
	87-A20-613-040		C-IC,BU9262AFS
	87-A20-452-040		C-IC,TC9260FS
TRANSISTOR			
	87-026-263-080		C-TR,RN1410
	89-213-702-010		TR,2SB1370E
	87-A30-076-080		C-TR,2SC3052F
	87-A30-075-080		C-TR,2SA1235F
	87-026-610-080		TR,KTC3198GR
	87-A30-073-080		C-TR,RT1N 141C
	87-A30-085-070		C-TR,CSA1362GR
	87-A30-083-080		TR,CSD1489B
	87-A30-084-080		TR,CSB1058B
	87-A30-071-080		C-TR,RT1N 144C
	87-026-609-080		TR,KTA1266GR
	87-A30-086-070		C-TR,CSD1306E
	87-A30-106-070		C-TR,CMBT5551
	87-A30-111-080		TR,C2N5401
	87-A30-097-010		TR,FN1016
	87-A30-098-010		TR,FP1016
	87-A30-089-010		FET,2SK2723
	87-A30-072-080		C-TR,RT1P 144C
	87-A30-087-080		C-FET,2SK2158
	87-A30-074-080		C-TR,RT1P 141C
	89-327-143-080		C-TR,2SC2714(O)
	89-505-434-540		C-TR,2SK543-TB (4/5)<EZ,K,HR>
	87-026-463-080		TR,2SA933S
	87-026-232-080		C-TR,DTA144WK
	87-A30-112-080		TR,C2N5551
	89-420-612-010		TR,2SD2061E
DIODE			
	87-A40-270-080		C-DIODE,MC2838
	87-A40-116-060		DIODE,RS403L-B-D-51<U,EZ,K>
	87-A40-115-060		DIODE,RS603M<EXP U>
	87-017-437-080		DIODE,1N4148M
	87-A40-246-080		DIODE,1N4148T-72
	87-A40-269-080		C-DIODE,MC2836
	87-070-274-080		DIODE,1N4003 SEM
	87-A40-344-080		ZENER,MTZJ6.2C
	87-A40-341-080		ZENER,MTZJ36A
	87-A40-345-080		ZENER,MTZJ10C
	87-070-136-080		ZENER,MTZJ5.1B
	87-070-178-090		DIODE,1N5402-BD54
	87-A40-004-080		ZENER,MTZJ16A
	87-A40-003-080		ZENER,MTZJ4.3A
	87-A40-202-080		ZENER,UZ5.6BSB
	87-A40-234-080		ZENER,MTZJ5.6A

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
MAIN C.B			
	88-906-241-110		FF-CABLE,6P 1.25
C101	87-010-917-090		CAP,E 3300-50 M SMG<U,EZ,K>
C101	87-016-520-090		CAP,E 3300-65 M SMG<LH,HR>
C102	87-010-917-090		CAP,E 3300-50 M SMG<U,EZ,K>
C102	87-016-520-090		CAP,E 3300-65 M SMG<LH,HR>
C103	87-010-928-090		CAP,E 4700-25 M SMG
C104	87-010-928-090		CAP,E 4700-25 M SMG
C105	87-012-368-080		C-CAP,S 0.1-50 Z F
C106	87-012-368-080		C-CAP,S 0.1-50 Z F
C107	87-012-368-080		C-CAP,S 0.1-50 Z F
C108	87-012-368-080		C-CAP,S 0.1-50 Z F
C109	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C110	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C111	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C112	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C113	87-010-384-080		CAP,E 100-25 M SME<U>
C113	87-010-247-080		CAP,E 100-50 M SME<EZ,K,LH,HR>
C116	87-010-384-080		CAP,E 100-25 M SME<U>
C116	87-010-247-080		CAP,E 100-50 M SME<EZ,K,LH,HR>
C117	87-010-430-080		CAP,E 100-63 M SME
C118	87-010-263-080		CAP,E 100-10 SME
C119	87-010-260-080		CAP,E 47-25 SME
C120	87-010-403-080		CAP,E 3.3-50 M SME
C121	87-012-140-080		C-CAP,S 470P-50 J CH
C122	87-010-263-080		CAP,E 100-10 SME<U>
C123	87-010-247-080		CAP,100-50 M SME
C124	87-010-112-080		CAP,E 100-16 M SME
C125	87-010-235-080		CAP,E 470-16 SME
C126	87-012-369-080		C-CAP,S 0.047-50 Z F<EZ,K>
C127	87-012-369-080		C-CAP,S 0.047-50 Z F<EZ,K>
C129	87-010-393-080		CAP,E 100-35 M SME
C201	87-010-401-080		CAP,E 1-50 M SME
C202	87-010-401-080		CAP,E 1-50 M SME
C205	87-010-181-080		C-CAP,S 1800P-50K B<EZ,K>
C205	87-010-182-080		C-CAP,S 2200P-50K B<U>
C205	87-010-180-080		C-CAP,S 1500P-50K B<LH,HR>
C206	87-010-181-080		C-CAP,S 1800P-50K B<EZ,K>
C206	87-010-182-080		C-CAP,S 2200P-50K B<U>
C206	87-010-180-080		C-CAP,S 1500P-50K B<LH,HR>
C207	87-010-404-080		CAP,E 4.7-50 M SME
C208	87-010-404-080		CAP,E 4.7-50 M SME
C209	87-010-404-080		CAP,E 4.7-50 M SME
C210	87-010-404-080		CAP,E 4.7-50 M SME
C211	87-010-186-080		C-CAP,S 4700P-50 K B
C212	87-010-186-080		C-CAP,S 4700P-50 K B
C213	87-010-260-080		CAP,E 47-25 SME
C214	87-010-260-080		CAP,E 47-25 SME
C215	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C219	87-012-368-080		C-CAP,S 0.1-50 Z F
C220	87-012-368-080		C-CAP,S 0.1-50 Z F
C221	87-012-368-080		C-CAP,S 0.1-50 Z F
C222	87-012-368-080		C-CAP,S 0.1-50 Z F
C223	87-010-194-080		C-CAP,S 0.047-25 Z F
C225	87-A10-516-080		C-CAP,S 100P-200 J C
C226	87-A10-516-080		C-CAP,S 100P-200 J C
C227	87-018-134-080		CAP,TC U 0.01-16 N Y<EZ,K>
C228	87-018-131-080		CAP,TC U 1000P-50 K<EZ,K>
C229	87-016-461-080		C-CAP,S 0.47-16 Z F
C230	87-016-461-080		C-CAP,S 0.47-16 Z F
C231	87-010-176-080		C-CAP,S 680P-50 J SL<EZ,K>
C232	87-010-176-080		C-CAP,S 680P-50 J SL<EZ,K>
C235	87-010-213-080		C-CAP,S 0.015-25 K B<EZ,K>
C236	87-010-213-080		C-CAP,S 0.015-25 K B<EZ,K>
C237	87-010-197-080		C-CAP,S 0.01-25 K B<EZ,K>
C238	87-010-197-080		C-CAP,S 0.01-25 K B<EZ,K>
C239	87-010-318-080		C-CAP,S 47P-50 J CH<EZ,K>
C240	87-010-318-080		C-CAP,S 47P-50 J CH<EZ,K>
C242	87-010-405-080		CAP,E 10-50 M SME

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C243	87-010-197-080		C-CAP,S 0.01-25 K B
C301	87-010-318-080		C-CAP,S 47P-50 J CH
C302	87-010-318-080		C-CAP,S 47P-50 J CH
C303	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C304	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C305	87-012-145-080		C-CAP,S 270P-50 J CH
C306	87-012-145-080		C-CAP,S 270P-50 J CH
C307	87-010-196-080		C-CAP,S 0.1-25 Z F
C309	87-010-196-080		C-CAP,S 0.1-25 Z F<U,LH,HR>
C310	87-010-196-080		C-CAP,S 0.1-25 Z F<U,LH,HR>
C311	87-010-198-080		C-CAP,S 0.022-25 K B
C312	87-010-198-080		C-CAP,S 0.022-25 K B
C313	87-010-178-080		C-CAP,S 1000P-50 K B<U,LH,HR>
C313	87-010-180-080		C-CAP,S 1500P-50 K B<EK,Z>
C314	87-010-178-080		C-CAP,S 1000P-50 K B<U,LH,HR>
C314	87-010-180-080		C-CAP,S 1500P-50 K B<EK,Z>
C315	87-010-178-080		C-CAP,S 1000P-50 K B
C316	87-010-178-080		C-CAP,S 1000P-50 K B
C317	87-012-142-080		C-CAP,S 0.33-16 Z F<EZ,K>
C318	87-012-142-080		C-CAP,S 0.33-16 Z F<EZ,K>
C319	87-012-141-080		C-CAP,S 0.22-16 Z F<EZ,K>
C320	87-012-141-080		C-CAP,S 0.22-16 Z F<EZ,K>
C321	87-016-492-080		C-CAP,S 0.33-16 Z F<U,LH,HR>
C321	87-012-141-080		C-CAP,S 0.22-16 Z F<EZ,K>
C322	87-016-492-080		C-CAP,S 0.33-16 Z F<U,LH,HR>
C322	87-012-141-080		C-CAP,S 0.22-16 Z F<EZ,K>
C324	87-010-260-080		CAP,E 47-25 SME
C325	87-010-370-080		CAP,E 330-6.3 M SME
C327	87-010-404-080		CAP,E 4.7-50 M SME
C328	87-010-404-080		CAP,E 4.7-50 M SME
C332	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C335	87-010-401-080		CAP,E 1-50 M SME
C336	87-010-401-080		CAP,E 1-50 M SME
C337	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C339	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C340	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C351	87-012-140-080		C-CAP,S 470P-50 J CH
C352	87-012-140-080		C-CAP,S 470P-50 J CH
C354	87-010-175-080		C-CAP,S 560P-50 J SL
C355	87-012-349-080		C-CAP,S 1000P-50 J CH
C356	87-010-260-080		CAP,E 47-25 SME
C357	87-010-197-080		C-CAP,S 0.01-25 K B
C358	87-010-183-080		C-CAP,S 2700P-50 K B
C359	87-010-183-080		C-CAP,S 2700P-50 K B
C360	87-010-183-080		C-CAP,S 2700P-50 K B
C370	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C371	87-010-179-080		C-CAP,S 1200P-50 K B<EZ,K>
C372	87-010-179-080		C-CAP,S 1200P-50 K B<EZ,K>
C373	87-010-993-080		C-CAP,S 0.056-25 K B<U,LH,HR>
C373	87-010-179-080		C-CAP,S 1200P-50 K B<EZ,K>
C374	87-010-993-080		C-CAP,S 0.056-25 K B<U,LH,HR>
C374	87-010-179-080		C-CAP,S 1200P-50 K B<EZ,K>
C375	87-010-545-080		CAP,0.22-50 M SME<EZ,K>
C376	87-010-545-080		CAP,0.22-50 M SME<EZ,K>
C378	87-010-196-080		C-CAP,S 0.1-25 Z F<U,LH,HR>
C379	87-010-382-080		CAP,E 22-25 M SME<U,LH,HR>
C380	87-010-382-080		CAP,E 22-25 M SME
C381	87-010-197-080		C-CAP,S 0.01-25 K B
C382	87-010-312-080		C-CAP,S 15P-50 J CH<U,LH,HR>
C382	87-010-318-080		C-CAP,S 47P-50 J CH<EZ,K>
C383	87-010-197-080		C-CAP,S 0.01-25 K B
C384	87-010-402-080		CAP,E 2.2-50 M SME
C385	87-010-184-080		C-CAP,S 3300P-50 K B<EZ,K>
C386	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C387	87-012-145-080		C-CAP,S 270P-50 J CH
C388	87-010-154-080		C-CAP,S 10P-50 D CH
C401	87-010-187-080		C-CAP,S 5600P-50 K B
C402	87-010-187-080		C-CAP,S 5600P-50 K B
C403	87-010-405-080		CAP,E 10-50 M SME

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C404	87-010-405-080		CAP,E 10-50 M SME
C405	87-010-260-080		CAP,E 47-25 SME
C406	87-010-101-080		CAP,E 220-16 SME
C407	87-010-188-080		C-CAP,S 6800P-50 K B
C408	87-010-188-080		C-CAP,S 6800P-50 K B
C409	87-012-140-080		C-CAP,S 470P-50 J CH
C410	87-012-140-080		C-CAP,S 470P-50 J CH
C411	87-010-197-080		C-CAP,S 0.01-25 K B
C412	87-010-197-080		C-CAP,S 0.01-25 K B
C413	87-010-195-080		C-CAP,S 0.068-25 Z F C2012
C414	87-010-195-080		C-CAP,S 0.068-25 Z F C2012
C415	87-010-404-080		CAP,E 4.7-50 M SME
C416	87-010-404-080		CAP,E 4.7-50 M SME
C417	87-010-404-080		CAP,E 4.7-50 M SME
C418	87-010-404-080		CAP,E 4.7-50 M SME
C420	87-018-209-080		CAP,TCU 0.01-16 N Y<EZ,K>
C421	87-010-401-080		CAP,E 1-50 M SME
C422	87-010-401-080		CAP,E 1-50 M SME
C516	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C601	87-010-322-080		C-CAP,S 100P-50J C H<EZ,K>
C602	87-010-322-080		C-CAP,S 100P-50J C H<EZ,K>
C605	87-010-180-080		C-CAP,S 1500P-50 K B
C606	87-010-180-080		C-CAP,S 1500P-50 K B
C609	87-010-322-080		C-CAP,S 100P-50J C H<EZ,K>
C610	87-010-322-080		C-CAP,S 100P-50J C H<EZ,K>
C611	87-016-081-080		C-CAP,S 0.1-16 R K<U,LH,HR>
C611	87-010-196-080		C-CAP,S 0.1-25 Z F<EZ,K>
C613	87-010-404-080		CAP,E 4.7-50 M SME
C614	87-010-404-080		CAP,E 4.7-50 M SME
C615	87-010-183-080		C-CAP,S 2700P-50 K B
C619	87-010-263-080		CAP,E 100-10 SME
C620	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C621	87-010-263-080		CAP,E 100-10 SME
C622	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C623	87-010-194-080		C-CAP,S 0.047-25 Z F
C629	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C630	87-010-196-080		C-CAP,S 0.1-25 Z F C2012<EZ,K>
C631	87-010-196-080		C-CAP,S 0.1-25 Z F C2012<EZ,K>
C632	87-010-196-080		C-CAP,S 0.1-25 Z F C2012<EZ,K>
C633	87-010-197-080		C-CAP,S 0.01-25 K B<EZ,K>
C637	87-010-322-080		C-CAP,S 100P-50J C H<EZ,K>
C646	87-010-322-080		C-CAP,S 100P-50J C H
C647	87-010-322-080		C-CAP,S 100P-50J C H
C701	87-010-381-080		CAP,E 330-16 SME
C702	87-010-404-080		CAP,E 4.7-50 M SME
C703	87-010-197-080		C-CAP,S 0.01-25 K B
C704	87-010-197-080		C-CAP,S 0.01-25 K B
C711	87-010-263-080		CAP,E 100-10 SME
C712	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C713	87-010-197-080		C-CAP,S 0.01-25 K B
C714	87-010-197-080		C-CAP,S 0.01-25 K B
C715	87-010-322-080		C-CAP,S 100P-50J C H<EZ,K>
C721	87-010-312-080		C-CAP,S 15P-50 J CH
C722	87-010-312-080		C-CAP,S 15P-50 J CH
C723	87-010-178-080		C-CAP,S 1000P-50 K B
C725	87-010-178-080		C-CAP,S 1000P-50 K B
C727	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C728	87-010-248-080		CAP,E 220-10 SME
C755	87-010-197-080		C-CAP,S 0.01-25 K B
C756	87-010-197-080		C-CAP,S 0.01-25 K B
C757	87-010-318-080		C-CAP,S 47P-50 J CH
C758	87-010-149-080		C-CAP,S 5P-50 CH
C761	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C762	87-010-197-080		C-CAP,S 0.01-25 K B
C763	87-010-194-080		C-CAP,S 0.047-25 Z F
C765	87-010-197-080		C-CAP,S 0.01-25 K B
C766	87-010-197-080		C-CAP,S 0.01-25 K B
C767	87-010-405-080		CAP,E 10-50 M SME
C768	87-010-197-080		C-CAP,S 0.01-25 K B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C769	87-010-408-080		CAP,E 47-50 SME
C770	87-015-821-080		C-CAP, 0.047-50 Z F GR
C771	87-010-407-080		CAP,E 33-50 SME
C772	87-010-194-080		C-CAP,S 0.047-25 Z F
C773	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C774	87-010-263-080		CAP,E 100-10 SME
C775	87-010-404-080		CAP,E 4.7-50 M SME
C776	87-010-197-080		C-CAP,S 0.01-25 K B<EXP HR>
C777	87-010-400-080		CAP,E 0.47-50 M SME
C778	87-010-401-080		CAP,E 1-50 M SME
C779	87-010-401-080		CAP,E 1-50 M SME
C780	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C781	87-010-405-080		CAP,E 10-50 M SME
C782	87-010-405-080		CAP,E 10-50 M SME
C783	87-015-819-080		C-CAP,0.01-50 K B
C784	87-010-197-080		C-CAP,S 0.01-25 K B
C785	87-010-400-080		CAP,E 0.47-50 M SME
C786	87-010-400-080		CAP,E 0.47-50 M SME
C787	87-010-184-080		C-CAP,S 3300P-50 K B
C788	87-010-184-080		C-CAP,S 3300P-50 K B
C789	87-010-179-080		C-CAP,S 1200P-50 K B
C790	87-010-179-080		C-CAP,S 1200P-50 K B
C791	87-010-405-080		CAP,E 10-50 M SME
C793	87-010-178-080		C-CAP,S 1000P-50 K B<U,K,LH,HR>
C793	87-012-156-080		C-CAP,S 220P-50J CH<EZ>
C794	87-010-406-080		CAP,E 22-50 M SME
C795	87-010-596-080		C-CAP,S 0.047-16 R K
C796	87-010-403-080		CAP,E 3.3-50 M SME
C797	87-010-182-080		C-CAP,S 2200P-50 K B<U,LH>
C797	87-010-180-080		C-CAP,S 1500P-50 K B<EZ,K,HR>
C798	87-010-182-080		C-CAP,S 2200P-50 K B<U,LH>
C798	87-010-180-080		C-CAP,S 1500P-50 K B<EZ,K,HR>
C799	87-010-194-080		C-CAP,S 0.047-25 Z F
C812	87-010-197-080		C-CAP,S 0.01-25 K B
C814	87-010-197-080		C-CAP,S 0.01-25 K B
C820	87-010-408-080		CAP,E 47-50 SME
C821	87-010-197-080		C-CAP,S 0.01-25 K B
C822	87-010-197-080		C-CAP,S 0.01-25 K B
C823	87-010-197-080		C-CAP,S 0.01-25 K B
C828	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C829	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C861	87-012-156-080		C-CAP,S 220P-50J C H<EZ>
C864	87-010-405-080		CAP,E 10-50 M SME<EZ>
C865	87-010-196-080		C-CAP,S 0.1-25 Z F C2012<EZ>
C866	87-010-405-080		CAP,E 10-50 M SME<EZ>
C867	87-010-197-080		C-CAP,S 0.01-25 K B<EZ>
C868	87-010-316-080		C-CAP,S 33P-50 J CH<EZ>
C869	87-010-316-080		C-CAP,S 22P-50 J CH<EZ>
C940	87-010-197-080		C-CAP,S 0.01-25 K B<EZ,K,HR>
C941	87-010-314-080		C-CAP,S 22P-50 J CH<HR>
C942	87-010-151-080		C-CAP,S 7P-50D C H<EZ,K>
C943	87-010-197-080		C-CAP, S 0.01-25 K B<HR>
C944	87-014-051-080		CAP,PP 560P-100 J<HR>
C945	87-010-197-080		C-CAP,S 0.01-25 K B<HR>
C947	87-010-197-080		C-CAP,S 0.01-25 K B<EZ,K,HR>
C950	87-014-073-080		CAP,PP 4700P-100 J<HR>
C952	87-010-197-080		C-CAP,S 0.01-25 K B<EZ,K,HR>
C953	87-010-197-080		C-CAP,S 0.01-25 K B<HR>
C954	87-010-400-080		CAP,E 0.47-50 M SME<HR>
C956	87-010-263-080		CAP,E 100-10 SME<HR>
C962	87-010-401-080		CAP,E 1-50 M SME<HR>
C957	87-010-311-080		C-CAP,S 12P-50J C H<EZ,K>
C958	87-010-197-080		C-CAP,S 0.01-25 K B<EZ,K>
C959	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C960	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C961	87-010-152-080		C-CAP,S 8P-50D C H<EXP HR>
C962	87-010-401-080		CAP,E 1-50 M SME<EZ,K>
CF801	87-008-261-010		FLTR,CFSFE10.7MA5<U,LH,HR>
CF801	87-008-423-010		FLTR,IF SFE10.7MS3G-A<EZ,K>

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
CF802	87-008-261-010		FLTR,CFSFE10.7MA5<U,LH,HR>
CF802	87-785-747-010		CF,MS2 GHY,R<EZ,K>
⚠ F201	87-026-691-080		FUSE,10A 125V 251<U>
⚠ F202	87-026-691-080		FUSE,10A 125V 251<U>
FFE801	A8-7ZA-293-070		7ZA-2 FEUNC<HR>
FFE801	A8-7ZA-291-030		7ZA-2 YFEUNM<U,LH>
FFE801	A8-6ZA-191-030		6ZA-1 FEENM<EZ,K>
J252	87-A60-031-010		JACK,6.3 BLK ST W/S
J253	87-A60-413-010		JACK,PIN 1P YKC21-3466
J254	87-A60-238-010		TERMINAL,SP 4P (MSC)
J601	87-A60-426-010		JACK,PIN 6P 3835
J801	87-A60-202-010		TERMINAL,ANT 4P MSP<U,LH,HR>
J801	87-A60-427-010		TERMINAL,ANT PAL 2P<EZ,K>
L201	87-003-383-010		COIL,1UH K
L202	87-003-383-010		COIL,1UH K
L301	87-A50-049-010		COIL,TRAP 85K(COI)
L302	87-A50-049-010		COIL,TRAP 85K(COI)
L351	87-007-342-010		COIL,OSC 85KHZ BIAS
L601	87-003-231-089		C-COIL,1UH
L770	87-005-849-080		COIL,10UH K CECS
L771	87-A50-165-010		COIL,FM DET-N(TOK)
L772	87-A90-245-010		FLTR,CFAZH-450(TOK)<U,LH,EZ,K>
L772	87-A90-052-010		FLTR,CFMT-450A(TOK)<HR>
L791	87-A50-027-010		COIL,1 POLE MPX (TOK)<EZ,K>
L792	87-A50-027-010		COIL,1 POLE MPX (TOK)<EZ,K>
L832	87-005-847-080		COIL,2.2UH K CECS
L850	87-005-847-080		COIL,2.2UH K CECS<EZ,K>
L941	87-A50-020-010		COIL,ANT LW (COI)252KHZ<EZ,K>
L941	87-A50-022-010		COIL,ANT SW (COI)7.96MHZ<HR>
L942	87-A50-019-010		COIL,OSC LW (COI) 856KHZ<EZ,K>
L942	87-A50-173-010		COIL,OSC SW (COI)<HR>
L943	87-005-372-080		COIL,1 MHZ K LALO3<HR>
L944	87-A50-159-010		COIL,10MH K C28<HR>
L981	87-NF4-650-010		COIL,AM PACK4N(TOK)<U,LH>
L981	87-NF4-668-010		COIL,AM PACK2(TOM)<EZ,K>
L981	87-NF4-666-010		COIL,AM PACK3(TOK)<HR>
⚠ PR201	87-026-682-080		PROTECTOR,10A 60V<EZ,K,LH,HR>
⚠ PR202	87-026-682-080		PROTECTOR,10A 60V<EZ,K,LH,HR>
R123	87-022-200-080		RES,M/F 0.56-1W J<U>
R229	87-A00-257-080		RES,M/F 0.15-1W J<U,EZ,K>
R230	87-A00-257-080		RES,M/F 0.15-1W J<U,EZ,K>
R231	87-A00-257-080		RES,M/F 0.15-1W J<LH,HR>
R232	87-A00-257-080		RES,M/F 0.15-1W J<LH,HR>
RY101	87-045-389-010		RELAY,12V OSA-SS-212DM5
SFR301	87-024-438-080		SFR,220K H RH063MC<U,LH,HR>
SFR301	87-024-435-080		SFR,33K H RH063MC<EZ,K>
SFR302	87-024-438-080		SFR,220K H RH063MC<U,LH,HR>
SFR302	87-024-435-080		SFR,33K H RH063MC<EZ,K>
SFR303	87-024-438-080		SFR,220K H RH063MC<U,LH,HR>
SFR303	87-024-435-080		SFR,33K H RH063MC<EZ,K>
SFR304	87-024-438-080		SFR,220K H RH063MC<U,LH,HR>
SFR304	87-024-435-080		SFR,33K H RH063MC<EZ,K>
SFR305	87-024-436-080		SFR,47K H RH063MC<EZ,K>
SFR306	87-024-436-080		SFR,47K H RH063MC<EZ,K>
SFR351	87-024-436-080		SFR,47K H RH063MC
SFR352	87-024-436-080		SFR,47K H RH063MC
TC942	87-011-221-080		TRIMMER,CER 30P <EZ,K>
TH201	87-A90-221-080		C-THMS 100K<EZ,K,HR>
TH202	87-A90-221-080		C-THMS 100K<EZ,K,HR>
W001	85-NF5-628-010		F-CABLE,7P-2.5
X721	87-A70-061-010		VIB,XTAL 4.500MHZ CSA-309
X771	87-030-354-010		VIB,CER 450.0KHZ BFUC<HR>
X850	87-KT1-608-010		XTAL 4.332MHZ<EZ>
FRONT C.B			
	85-NF5-618-010		CABLE,FFC 13P-1.25
	85-NF5-615-010		CABLE,FFC 15P-1.25
	88-913-191-110		FF CABLE,13P-1.25
C101	87-010-198-080		C-CAP,S 0.022-25 K B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C102	87-010-198-080		C-CAP,S 0.022-25 K B
C103	87-010-197-080		C-CAP,S 0.01-25 K B
C104	87-010-312-080		C-CAP,S 15P-50 J CH
C105	87-010-316-080		C-CAP,S 33P-50 J CH
C106	87-010-320-080		C-CAP,S 68P-50 J CH
C107	87-012-157-080		C-CAP,S 330P-50 J CH GRM
C108	87-010-498-040		CAP,E 10-16 5L SRE
C109	87-010-494-040		CAP,E 1-50 5L SRE
C110	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C111	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C112	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C113	87-A10-189-040		CAP,E 220-10 M
C114	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C115	87-010-178-080		C-CAP,S 1000P-50 K B
C116	87-010-494-040		CAP,E 1-50 5L SRE
C117	87-010-550-040		CAP,E 100-6.3 5L SRE
C118	87-010-194-080		C-CAP,S 0.047-25 Z F
C119	87-010-408-040		CAP,E 47-50 M SME
C120	87-010-404-040		CAP,E 4.7-50 SME
C121	87-010-404-040		CAP,E 4.7-50 SME
C122	87-010-194-080		C-CAP,S 0.047-25 Z F
C123	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C124	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C125	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C127	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C128	87-010-178-080		C-CAP,S 1000P-50 K B
C201	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C351	87-012-158-080		C-CAP,S 390P-50 J CH GRM
C352	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C353	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C354	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C355	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C356	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C357	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C403	87-010-596-080		C-CAP,S 0.047-16 K R
C404	87-010-596-080		C-CAP,S 0.047-16 K R
C405	87-010-401-040		CAP,E 1-50 M SME
C406	87-010-401-040		CAP,E 1-50 M SME
C407	87-010-184-080		C-CAP,S 3300P-50 K B
C408	87-010-184-080		C-CAP,S 3300P-50 K B
C409	87-010-592-080		C-CAP,S 0.022-16 K R
C410	87-010-592-080		CAP,S 0.022-16 K R
C411	87-016-463-080		C-CAP,0.33-16 K B
C412	87-016-463-080		C-CAP,0.33-16 K B
C413	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C414	87-010-374-040		CAP,E 47-10 SME
C415	87-010-374-040		CAP,E 47-10 SME
C416	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C417	87-016-081-080		C-CAP,S 0.1-16 K R
C418	87-010-405-040		CAP,E 10-50 M SME
C601	87-010-560-040		CAP,E 10-50 M 5L MA
C602	87-010-186-080		C-CAP,S 4700P-50 K B
C603	87-010-498-040		CAP,E 10-16 M 5L
C604	87-010-499-040		CAP,E 22-6.3 M 5L
C605	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C606	87-010-322-080		C-CAP,S 100P-50 J CH<EZ,K>
C607	87-010-321-080		C-CAP,S 82P-50 J CH
C608	87-010-196-080		C-CAP,S 0.1-25 Z F C2012
C609	87-010-491-040		CAP,E 0.22-50 5L SRE
C610	87-010-322-080		C-CAP,S 100P-50 J CH<EZ,K>
C611	87-010-177-080		C-CAP,S 820P-50 J SL
C612	87-010-597-080		C-CAP,S 0.056-16 K R
C614	87-010-248-040		CAP,E 220-10 M SME
FB601	87-008-372-080		FLTR,EMIBL01 RN1
FL101	87-NF6-610-010		FL,BJ531GK
J601	87-NF7-630-010		JACK,3.5MO
J602	87-NF7-630-010		JACK,3.5MO
LED201	87-A40-317-080		LED,SLR-342VCT31 RED
LED202	87-A40-317-080		LED,SLR-342VCT31 RED
LED203	87-A40-317-080		LED,SLR-342VCT31 RED
LED204	87-A40-317-080		LED,SLR-342VCT31 RED
LED205	87-A40-317-080		LED,SLR-342VCT31 RED
LED206	87-A40-316-080		LED,SLR-56PCT31 GRN
LED207	87-A40-316-080		LED,SLR-56PCT31 GRN
LED208	87-A40-316-080		LED,SLR-56PCT31 GRN
LED209	87-A40-316-080		LED,SLR-56PCT31 GRN
LED210	87-A40-316-080		LED,SLR-56PCT31 GRN
LED211	87-A40-316-080		LED,SLR-56PCT31 GRN
LED212	87-A40-316-080		LED,SLR-56PCT31 GRN
LED213	87-A40-316-080		LED,SLR-56PCT31 GRN
LED214	87-A40-316-080		LED,SLR-56PCT31 GRN
LED215	87-A40-316-080		LED,SLR-56PCT31 GRN
LED216	87-A40-264-080		LED,SLH-56PCTE7 GRN
LED217	87-A40-264-080		LED,SLH-56PCTE7 GRN
LED218	87-A40-264-080		LED,SLH-56PCTE7 GRN
LED219	87-A40-264-080		LED,SLH-56PCTE7 GRN
LED220	87-A40-264-080		LED,SLH-56PCTE7 GRN
LED221	87-A40-264-080		LED,SLH-56PCTE7 GRN
LED223	87-A40-266-080		LED,SLH-56VCT31 RED
LED224	87-A40-266-080		LED,SLH-56VCT31 RED
LED225	87-A40-266-080		LED,SLH-56VCT31 RED
LED226	87-A40-266-080		LED,SLH-56VCT31 RED
LED227	87-A40-266-080		LED,SLH-56VCT31 RED
LED228	87-A40-266-080		LED,SLH-56VCT31 RED
LED229	87-A40-266-080		LED,SLH-56VCT31 RED
LED233	87-A40-265-010		LED,SLH-56PCL GRN
LED234	87-A40-265-010		LED,SLH-56PCL GRN
LED235	87-A40-267-010		LED,SLH-56VCL RED
LED236	87-A40-267-010		LED,SLH-56VCL RED
LED237	87-A40-265-010		LED,SLH-56PCL GRN
LED238	87-A40-265-010		LED,SLH-56PCL GRN
S301	87-A90-164-080		SW,TACT SKQNAB(N)
S302	87-A90-164-080		SW,TACT SKQNAB(N)
S303	87-A90-164-080		SW,TACT SKQNAB(N)
S304	87-A90-164-080		SW,TACT SKQNAB(N)
S305	87-A90-164-080		SW,TACT SKQNAB(N)
S306	87-A90-164-080		SW,TACT SKQNAB(N)
S307	87-A90-164-080		SW,TACT SKQNAB(N)
S308	87-A90-164-080		SW,TACT SKQNAB(N)
S314	87-A90-164-080		SW,TACT SKQNAB(N)
S315	87-A90-164-080		SW,TACT SKQNAB(N)
S316	87-A90-164-080		SW,TACT SKQNAB(N)
S317	87-A90-164-080		SW,TACT SKQNAB(N)
S318	87-A90-164-080		SW,TACT SKQNAB(N)
S319	87-A90-164-080		SW,TACT SKQNAB(N)
S320	87-A90-164-080		SW,TACT SKQNAB(N)
S323	87-A90-164-080		SW,TACT SKQNAB(N)
S324	87-A90-164-080		SW,TACT SKQNAB(N)
S325	87-A90-164-080		SW,TACT SKQNAB(N)
S326	87-A90-164-080		SW,TACT SKQNAB(N)
S327	87-A90-164-080		SW,TACT SKQNAB(N)
S328	87-A90-164-080		SW,TACT SKQNAB(N)
S330	87-A90-164-080		SW,TACT SKQNAB(N)<EZ
S331	87-A90-164-080		SW,TACT SKQNAB(N)
S332	87-A90-164-080		SW,TACT SKQNAB(N)
S333	87-A90-164-080		SW,TACT SKQNAB(N)
S334	87-A90-164-080		SW,TACT SKQNAB(N)
S335	87-A90-164-080		SW,TACT SKQNAB(N)
S337	87-A90-164-080		SW,TACT SKQNAB(N)
S339	87-A90-164-080		SW,TACT SKQNAB(N)<EZ
S340	87-A90-164-080		SW,TACT SKQNAB(N)<EZ
S341	87-A90-164-080		SW,TACT SKQNAB(N)<EZ
S342	87-A90-164-080		SW,TACT SKQNAB(N)
SW101	87-A90-535-010		SW,RTRY EC16B24304
X101	87-A70-070-080		VIB,CER 5.76MHZ CRHF

KEY C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
S365	87-A90-164-080		SW,TACT SKQNAB(N)
S366	87-A90-164-080		SW,TACT SKQNAB(N)
S367	87-A90-164-080		SW,TACT SKQNAB(N)
S368	87-A90-164-080		SW,TACT SKQNAB(N)
S369	87-A90-164-080		SW,TACT SKQNAB(N)

AC1 C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
⚠ FC1	87-A90-505-080		FUSE CLAMP,TP00351-5<U>
⚠ FC1	87-033-213-080		FUSE CLAMP,PFC5000<EZ,K>
⚠ FC1	87-033-147-010		FUSE CLAMP,MT-20<LH,HR>
⚠ FC2	87-033-213-080		FUSE CLAMP,PFC5000<EZ,K>
⚠ FC2	87-A90-505-080		FUSE CLAMP,TP00351-5<U>
⚠ FC2	87-033-147-010		FUSE CLAMP,MT-20<LH,HR>
⚠ F101	87-035-518-010		FUSE,5A 125V T 239 <U>
⚠ F101	87-035-365-010		FUSE,2A 250V T<EZ,K>
⚠ F101	87-035-370-010		FUSE,6.3A 250V T<LH,HR>
⚠ PT101	87-NFT-621-010		PT,7NF-T U<U>
⚠ PT101	87-NFT-624-010		PT,7NF-T EKZ<EZ,K>
⚠ PT101	87-NFT-623-010		PT,7NF-T HR<HR>
⚠ PT101	87-NFT-625-010		PT,7NF-T LH<LH>
⚠ T1	87-A60-317-010		TERMINAL, 1P MSC
⚠ T2	87-A60-317-010		TERMINAL, 1P MSC
⚠ SW101	87-A90-165-010		SW,SL1-2-3 SWS 2301<LH,HR>

AC2 C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
⚠ F001	87-026-691-080		FUSE,10A 125V 251<U>
⚠ F002	87-026-691-080		FUSE,10A 125V 251<U>
⚠ F003	87-026-690-080		FUSE,5A 125V 251<U>
⚠ F004	87-026-690-080		FUSE,5A 125V 251<U>
⚠ F005	87-026-691-080		FUSE,10A 125V 251<U>
⚠ F006	87-026-691-080		FUSE,10A 125V 251<U>
⚠ PR001	87-026-682-080		PROTECTOR,10A 60V<EZ,K,LH,HR>
⚠ PR002	87-026-682-080		PROTECTOR,10A 60V<EZ,K,LH,HR>
⚠ PR003	87-026-681-080		PROTECTOR,5A 60V<EZ,K,LH,HR>
⚠ PR004	87-026-681-080		PROTECTOR,5A 60V<EZ,K,LH,HR>
⚠ PR005	87-026-682-080		PROTECTOR,10A 60V<EZ,K,LH,HR>
⚠ PR006	87-026-682-080		PROTECTOR,10A 60V<EZ,K,LH,HR>

DECK C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
CON502	87-099-756-010		CONN,15P 9604 S F
SFR1	87-024-581-089		SFR,3.3K DIA 6H
SOL1	82-ZM1-618-010		SOL ASSY, 27
SOL2	82-ZM1-618-010		SOL ASSY, 27
SW1	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW2	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW3	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW4	87-036-110-010		SW, MICRO SPPB62
SW5	87-036-110-010		SW, MICRO SPPB62
SW6	87-036-110-010		SW, MICRO SPPB62
SW8	87-A90-248-010		SW, MICRO ESE11SH2CXQ
SW9	87-036-110-010		SW, MICRO SPPB62
W1	82-ZM3-601-019		RBN,CORD 4P-75

HEAD-1 C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
	85-ZM3-602-010		PWB,FLEX A

HEAD-2 C.B

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
	85-ZM3-602-010		PWB,FLEX A

PRO C.B

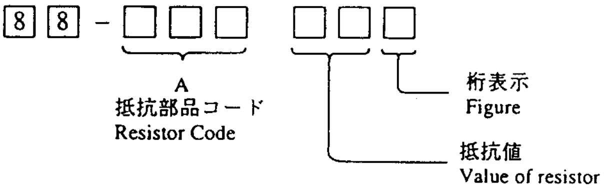
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C101	87-012-368-080		C-CAP,S 0.1-50 F
C102	87-012-368-080		C-CAP,S 0.1-50 F
C103	87-010-398-090		CAP,E 2200-35V
C104	87-010-398-090		CAP,E 2200-35V
C106	87-010-382-080		CAP, ELECT 22-25V
C107	87-012-368-080		C-CAP,S 0.1-50 F<EZ,K>
C108	87-012-368-080		C-CAP,S 0.1-50 F<EZ,K>
C109	87-016-369-080		C-CAP,S 0.033-25 B K
C110	87-010-194-080		CAP, CHIP 0.047
C112	87-010-196-080		CHIP CAPACITOR,0.1-25
C117	87-012-368-080		C-CAP,S 0.1-50 F<EZ,K>
C118	87-012-368-080		C-CAP,S 0.1-50 F<EZ,K>
C201	87-010-186-080		CAP,CHIP 4700P
C202	87-010-402-080		CAP, ELECT 2.2-50V
C203	87-010-322-080		C-CAP,S 100P-50 J CH<EZ,K>
C204	87-010-405-080		CAP, ELECT 10-50V
C205	87-A10-516-080		C-CAP,S 100P-200 J CH
C208	87-010-260-080		CAP, ELECT 47-25V
C209	87-010-993-080		C-CAP,S 0.056-25 B
C210	87-010-196-080		CHIP CAPACITOR,0.1-25
C211	87-010-197-080		CAP, CHIP 0.01 DM
C212	87-010-196-080		CHIP CAPACITOR,0.1-25
C213	87-010-406-080		CAP, ELECT 22-50
C214	87-010-197-080		C-CAP,0.01-25 BK<EZ,K>
C301	87-010-183-080		C-CAP,S 2700P-50 B
C302	87-010-402-080		CAP, ELECT 2.2-50V
C303	87-010-322-080		C-CAP,S 100P-50 J CH<EZ,K>
C304	87-010-382-080		CAP, ELECT 22-25V
C305	87-A10-516-080		C-CAP,S 100P-200 J CH
C308	87-010-260-080		CAP, ELECT 47-25V
C309	87-010-993-080		C-CAP,S 0.056-25 B
C310	87-010-196-080		CHIP CAPACITOR,0.1-25
C311	87-010-197-080		CAP, CHIP 0.01 DM
C312	87-010-196-080		CHIP CAPACITOR,0.1-25
C313	87-010-406-080		CAP, ELECT 22-50
C314	87-010-197-080		C-CAP,0.01-25 BK<EZ,K>
C315	87-012-368-080		C-CAP,S 0.1-50 F<EZ,K>
C316	87-012-368-080		C-CAP,S 0.1-50 F<EZ,K>
C501	87-010-176-080		C-CAP,S 680P-50 SL
C502	87-010-176-080		C-CAP,S 680P-50 SL
C507	87-016-456-080		CAP,E 22-16 LLA
C508	87-010-196-080		CHIP CAPACITOR,0.1-25
C509	87-010-112-080		CAP, ELECT 100-16V
C510	87-010-380-080		CAP, ELECT 47-16V
C512	87-016-472-080		CAP,E 22-16 SME(K)
C513	87-010-196-080		CHIP CAPACITOR,0.1-25
C514	87-010-263-080		CAP, ELECT 100-10V
C518	87-010-378-080		CAP, ELECT 10-16V
C519	87-010-404-080		CAP, ELECT 4.7-50V<U,LH,HR>
C519	87-010-378-080		CAP, ELECT 10-16V<EZ,K>
C520	87-010-404-080		CAP, ELECT 4.7-50V<U,LH,HR>
C520	87-010-378-080		CAP, ELECT 10-16V<EZ,K>
C521	87-010-400-080		CAP, ELECT 0.47-50V<U,LH,HR>
C521	87-010-378-080		CAP, ELECT 10-16V<EZ,K>
C522	87-010-378-080		CAP, ELECT 10-16V
C523	87-010-400-080		CAP, ELECT 0.47-50V
C524	87-016-081-080		C-CAP,S 0.1-16 RK
C525	87-010-248-080		CAP, ELECT 220-10V
C526	87-012-140-080		CAP 470P
C527	87-010-186-080		CAP,CHIP 4700P
C528	87-010-186-080		CAP,CHIP 4700P
C529	87-010-404-080		CAP, ELECT 4.7-50V
C532	87-A10-229-080		C-CAP,S 0.68-10 K W5
C533	87-012-393-080		C-CAP,S 0.22-16 R K
C534	87-012-393-080		C-CAP,S 0.22-16 R K
C535	87-010-404-080		CAP, ELECT 4.7-50V
C536	87-010-404-080		CAP, ELECT 4.7-50V
C537	87-012-393-080		C-CAP,S 0.22-16 R K
C538	87-012-393-080		C-CAP,S 0.22-16 R K
C539	87-016-081-080		C-CAP,S 0.1-16 RK

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C542	87-016-081-080		C-CAP,S 0.1-16 RK
C543	87-016-081-080		C-CAP,S 0.1-16 RK
C546	87-016-081-080		C-CAP,S 0.1-16 RK
C548	87-010-178-080		C-CAP,S 1000P-50 BK<EZ,K>
C549	87-010-178-080		C-CAP,S 1000P-50 BK<EZ,K>
C550	87-010-314-080		C-CAP,S 22P-50 CH<EZ,K>
C604	87-010-319-080		C-CAP,S 56P-50 CH
C605	87-010-319-080		C-CAP,S 56P-50 CH
C606	87-016-526-080		C-CAP,S 0.47-16 BK
C607	87-010-197-080		CAP, CHIP 0.01 DM
C608	87-010-180-080		C-CER 1500P
C609	87-010-197-080		CAP, CHIP 0.01 DM
C610	87-010-197-080		CAP, CHIP 0.01 DM
C611	87-010-197-080		CAP, CHIP 0.01 DM
C612	87-010-181-080		CAP,CHIP S 1800P
C613	87-010-196-080		CHIP CAPACITOR,0.1-25
C615	87-010-263-080		CAP, ELECT 100-10V
C616	87-010-404-080		CAP, ELECT 4.7-50V
C617	87-010-196-080		CHIP CAPACITOR,0.1-25
C618	87-010-263-080		CAP, ELECT 100-10V
C621	87-010-403-080		CAP, ELECT 3.3-50V
C622	87-012-141-080		C-CAP,S 0.22-16 ZF<U,LH,HR>

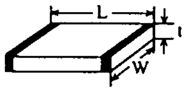
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
C622	87-A10-201-080		C-CAP,S 0.33-16 BK<EZ,K>
C701	87-010-401-080		CAP, ELECT 1-50V
C702	87-010-401-080		CAP, ELECT 1-50V
C703	87-010-263-080		CAP, ELECT 100-10V
C707	87-016-526-080		C-CAP,S 0.47-16 BK
C708	87-016-526-080		C-CAP,S 0.47-16 BK
C709	87-010-380-080		CAP, ELECT 47-16V
C712	87-010-197-080		C-CAP,S 0.01-25 BK<EZ,K>
C713	87-010-178-080		C-CAP,S 1000P-50 BK<EZ,K>
FB106	87-008-372-080		FILTER, EMIBLOI RNI<U,LH,HR>
FB512	87-008-372-080		FILTER, EMIBLOI RNI<EZ,K>
FB516	87-008-474-080		F-BEAD, BL02RN1-R62T<EZ,K>
FB705	87-008-372-080		FILTER, EMIBLOI RNI<EZ,K>
J201	87-A60-380-010		JACK,PIN 3P O/W/R YKC21-3
L201	87-003-383-010		COIL,1UH-S
L301	87-003-383-010		COIL,1UH-S
L601	87-005-212-080		COIL,220UH
R215	87-A00-257-080		RES,M/F 0.15-1W J
R315	87-A00-257-080		RES,M/F 0.15-1W J
R524	87-022-365-080		C-RES,S 100K-1/10W F

○チップ抵抗部品コード／CHIP RESISTOR PART CODE

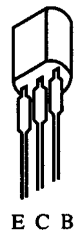
チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード : A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

TRANSISTOR ILLUSTRATION



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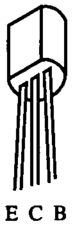
KTC3198GR



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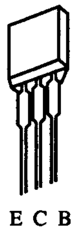

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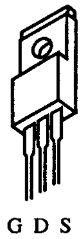

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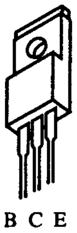

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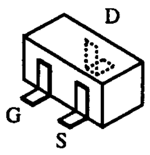

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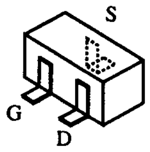

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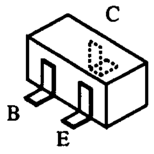

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RN1410
2SC3052F
2SA1235F
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RT1P141C
DTA144WS
CSA1362GR
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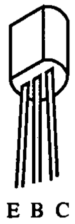
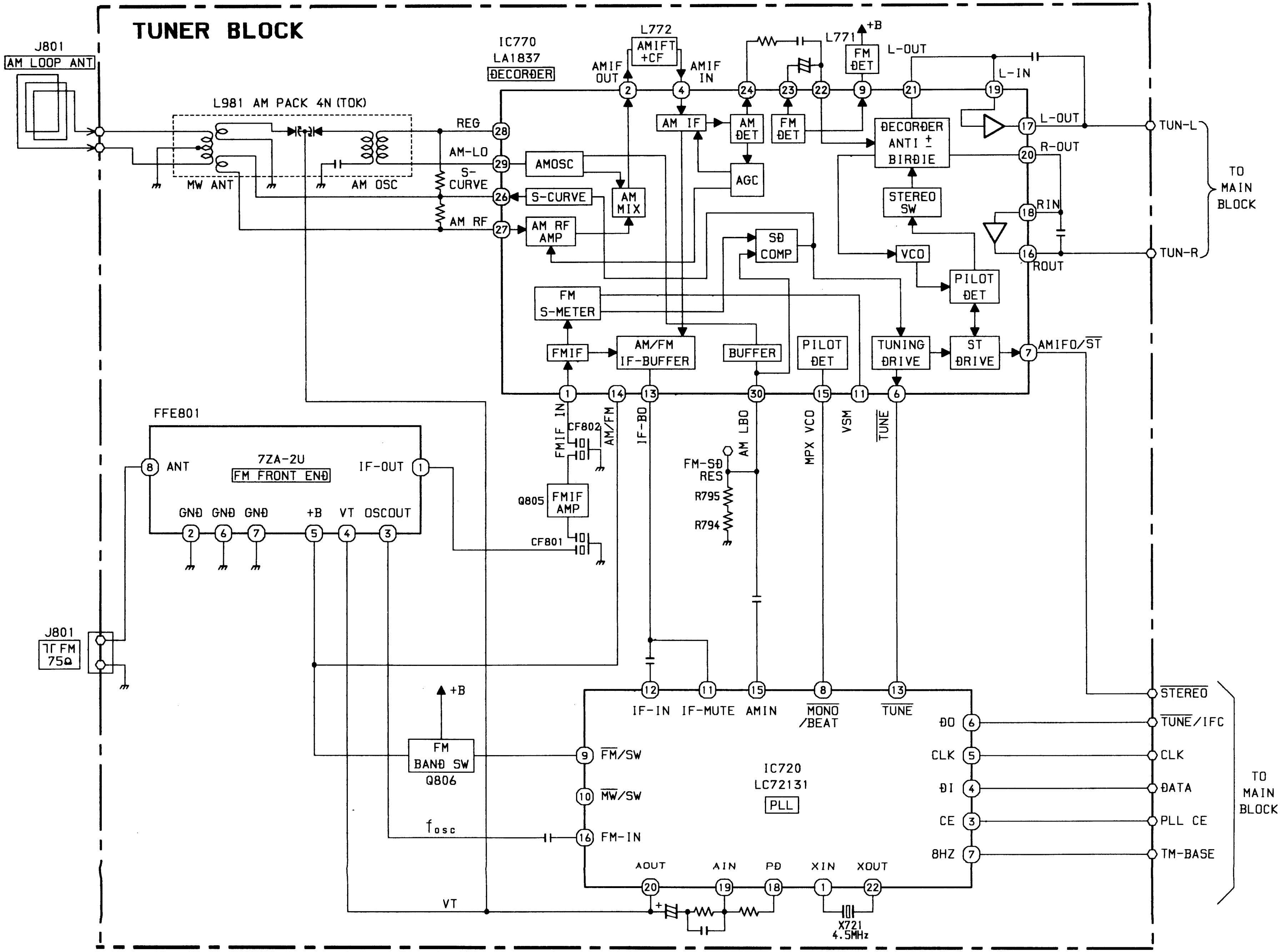
CMBT5551
RT1P144C

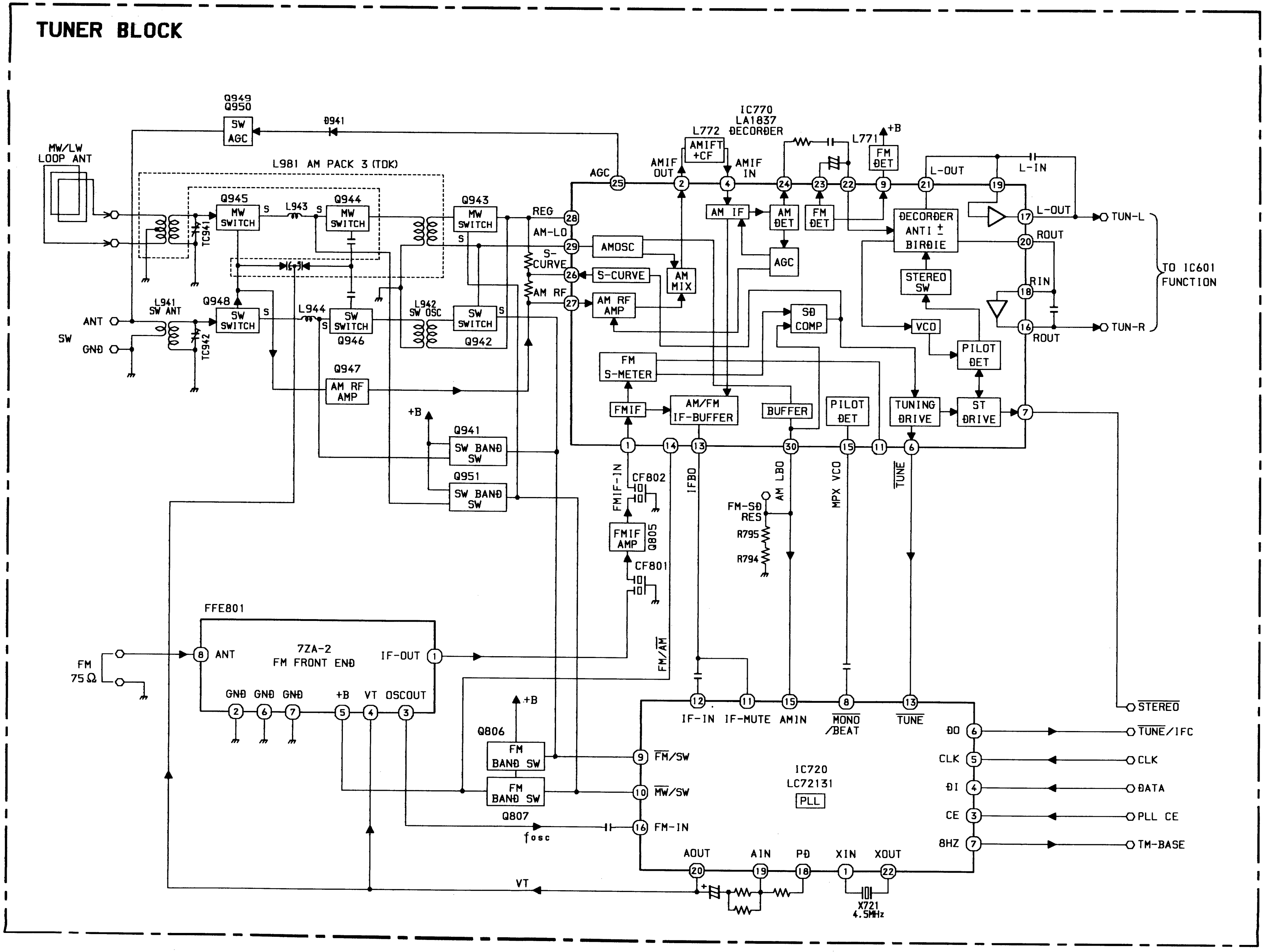


C2N5401
C2N5551

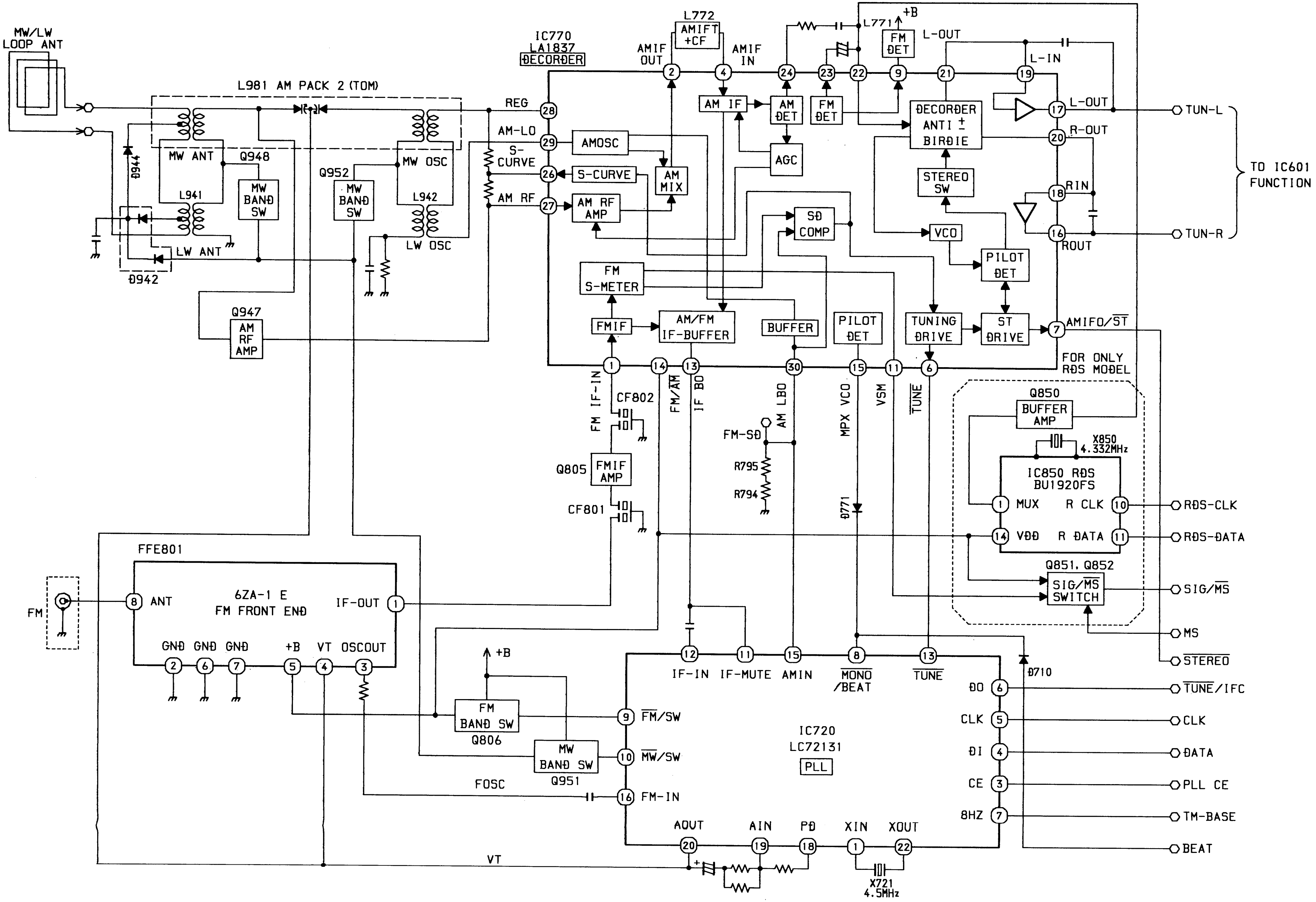
BLOCK DIAGRAM－1 (TUNER : U,LH)


TUNER BLOCK
J801
AM LOOP ANT
L981 AM PACK 4N (TOK)
MW ANT
AM OSC
REG
AM-LO
S-CURVE
AM RF
IC770
LA1837
DECORDER
L772
AMIFT +CF
AMIF OUT
AMIF IN
L771
+B
FM DET
L-OUT
L-IN
AM IF
AM DET
FM DET
AMOSC
AM MIX
S-CURVE
AM RF AMP
AGC
SD COMP
DECORDER ANTI ± BIRDIE
STEREO SW
VCO
PILOT DET
R-OUT
RIN
ROUT
TUN-L
TUN-R
TO MAIN BLOCK
FM S-METER
FMIF
AM/FM IF-BUFFER
BUFFER
PILOT DET
TUNING DRIVE
ST DRIVE
AMIFO/ST
FMIF IN
CF802
AM/FM
IF-BO
AM LBO
MPX VCO
VSM
TUNE
FM-SD RES
R795
R794
Q805
FMIF AMP
CF801
FFE801
7ZA-2U
FM FRONT END
ANT
IF-OUT
GND GND GND
+B
VT
OSCOUT
J801
FM 75Ω
+B
FM BAND SW
Q806
f_osc
VT
IF-IN
IF-MUTE
AMIN
MONO /BEAT
TUNE
FM/SW
MW/SW
FM-IN
IC720
LC72131
PLL
DO
CLK
DI
CE
8HZ
AOUT
AIN
PD
XIN
XOUT
X721 4.5MHz
STEREO
TUNE/IFC
CLK
DATA
PLL CE
TM-BASE
TO MAIN BLOCK

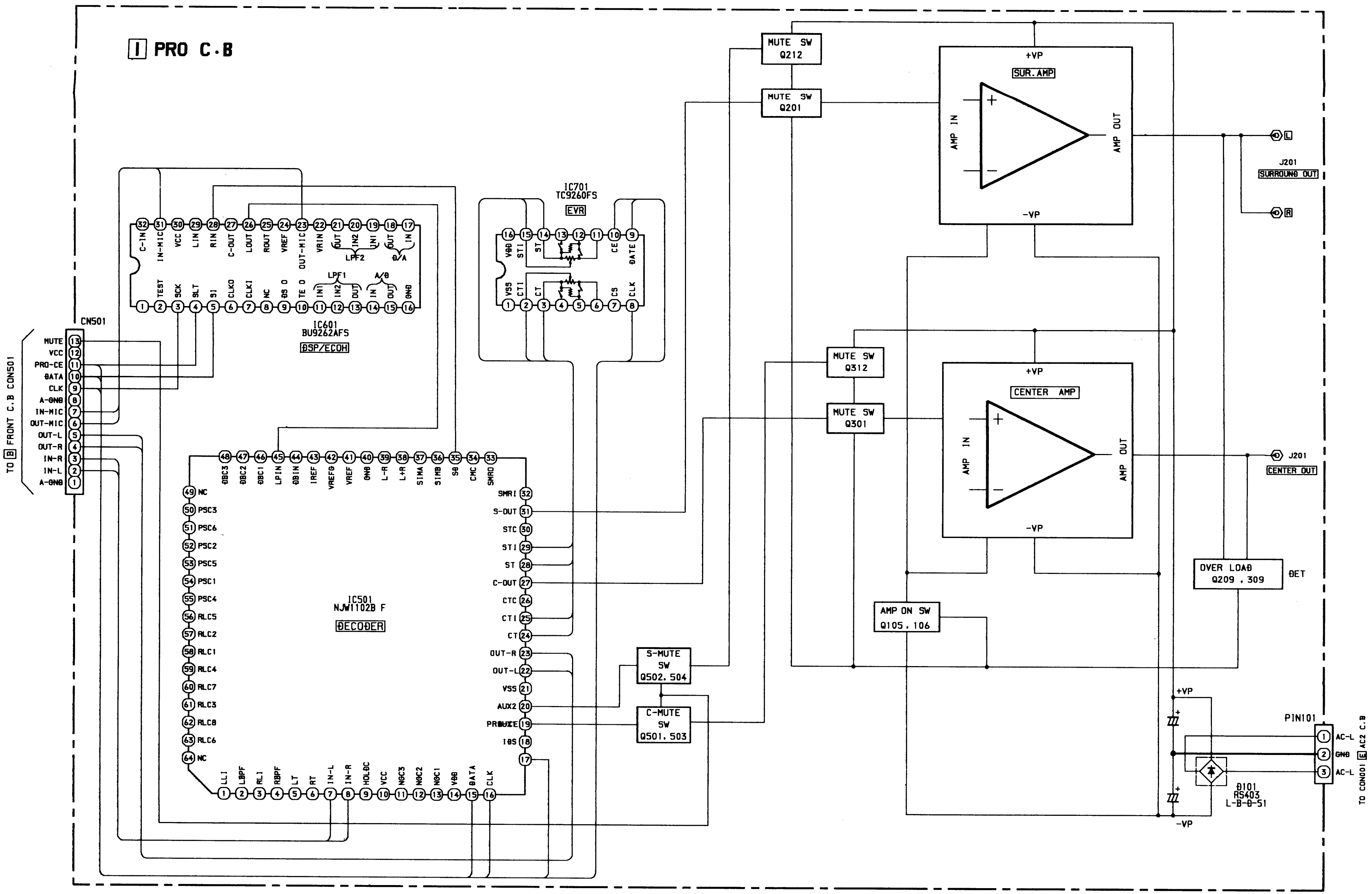
BLOCK DIAGRAM – 2 (TUNER : HR)


TUNER BLOCK
MW/LW LOOP ANT
ANT
SW
GND
Q949
Q950
SW AGC
D941
L981 AM PACK 3 (TDK)
Q945
MW SWITCH
L943
Q944
MW SWITCH
Q943
MW SWITCH
TC941
TC942
L941 SW ANT
Q948
SW SWITCH
L944
SW SWITCH
Q946
L942 SW OSC
SW SWITCH
Q942
Q947
AM RF AMP
+B
Q941
SW BAND SW
Q951
SW BAND SW
REG
AM-LO
S-CURVE
AM RF
AGC
IC770
LA1837
DECORDER
L772
AMIFT +CF
AMIF OUT
AMIF IN
L771
FM DET
L-OUT
L-IN
AMOSC
S-CURVE
AM RF AMP
AM MIX
AM IF
AM DET
FM DET
AGC
DECORDER ANTI ± BIRDIE
STEREO SW
SD COMP
VCO
PILOT DET
FM S-METER
FMIF
AM/FM IF-BUFFER
BUFFER
PILOT DET
TUNING DRIVE
ST DRIVE
L-OUT
ROUT
RIN
ROUT
TUN-L
TUN-R
TO IC601 FUNCTION
FMIF-IN
CF802
IFBO
FM-SD RES
R795
R794
AM LBO
MPX VCO
TUNE
FMIF AMP
Q805
CF801
FM/AM
FFE801
7ZA-2
FM FRONT END
ANT
IF-OUT
GND GND GND
+B VT OSCOUT
FM 75Ω
Q806
FM BAND SW
FM BAND SW
Q807
fosc
VT
IF-IN
IF-MUTE
AMIN
MONO /BEAT
TUNE
FM/SW
MW/SW
FM-IN
IC720
LC72131
PLL
DO
CLK
DI
CE
8HZ
AOUT
AIN
PD
XIN
XOUT
X721
4.5MHz
STEREO
TUNE/IFC
CLK
DATA
PLL CE
TM-BASE

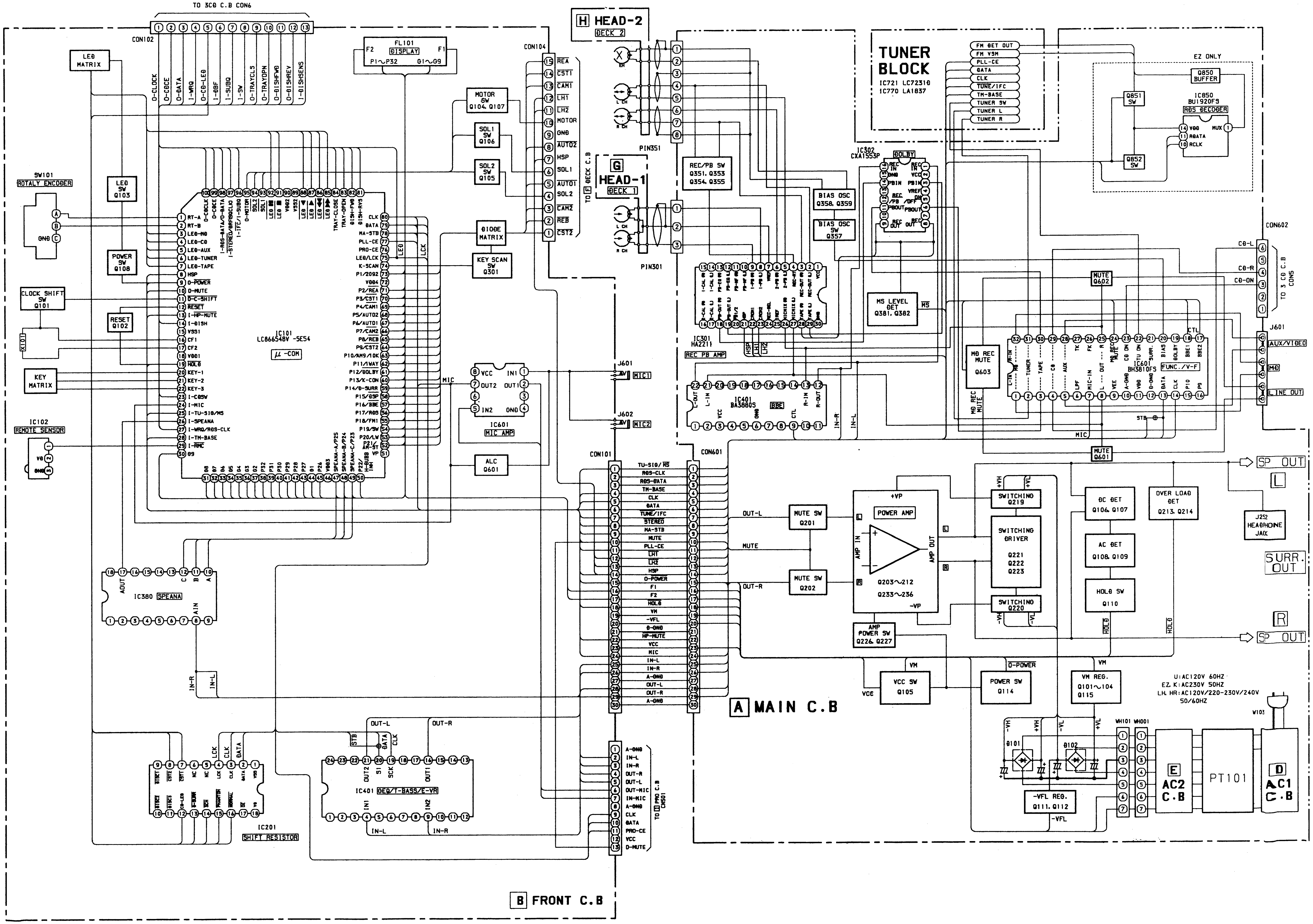
BLOCK DIAGRAM – 3 (TUNER : EZ,K)


MW/LW
LOOP ANT
L981 AM PACK 2 (TOM)
MW ANT
Q948
MW BAND SW
L941
D944
D942
LW ANT
Q952
MW BAND SW
MW OSC
L942
LW OSC
Q947
AM RF AMP
REG
AM-LO
S-CURVE
AM RF
IC770
LA1837
DECORDER
AMOSC
S-CURVE
AM RF AMP
AM MIX
AMIF OUT
L772
AMIFT +CF
AMIF IN
AM IF
AM DET
AGC
FM DET
L771
+B
FM DET
L-OUT
L-IN
DECORDER ANTI ± BIRDIE
STEREO SW
VCO
PILOT DET
ST DRIVE
TUNING DRIVE
SD COMP
FM S-METER
FMIF
AM/FM IF-BUFFER
BUFFER
PILOT DET
L-OUT
R-OUT
RIN
ROUT
AMIFO/ST
TUN-L
TUN-R
TO IC601 FUNCTION
FM IF-IN
FM/AM
IF BO
AM LBO
MPX VCO
VSM
TUNE
CF802
FM-SD
R795
R794
D771
Q805
FMIF AMP
CF801
FOR ONLY RDS MODEL
Q850
BUFFER AMP
X850 4.332MHz
IC850 RDS BU1920FS
MUX
R CLK
VDD
R DATA
RDS-CLK
RDS-DATA
Q851, Q852
SIG/MS SWITCH
SIG/MS
MS
STEREO
FFE801
6ZA-1 E FM FRONT END
ANT
IF-OUT
GND GND GND
+B
VT
OSCOUT
FM
+B
FM BAND SW
Q806
MW BAND SW
Q951
FOSC
IF-IN
IF-MUTE
AMIN
MONO /BEAT
TUNE
D710
IC720
LC72131
PLL
FM/SW
MW/SW
FM-IN
DO
CLK
DI
CE
8HZ
TUNE/IFC
CLK
DATA
PLL CE
TM-BASE
BEAT
AOUT
AIN
PD
XIN
XOUT
X721 4.5MHz
VT

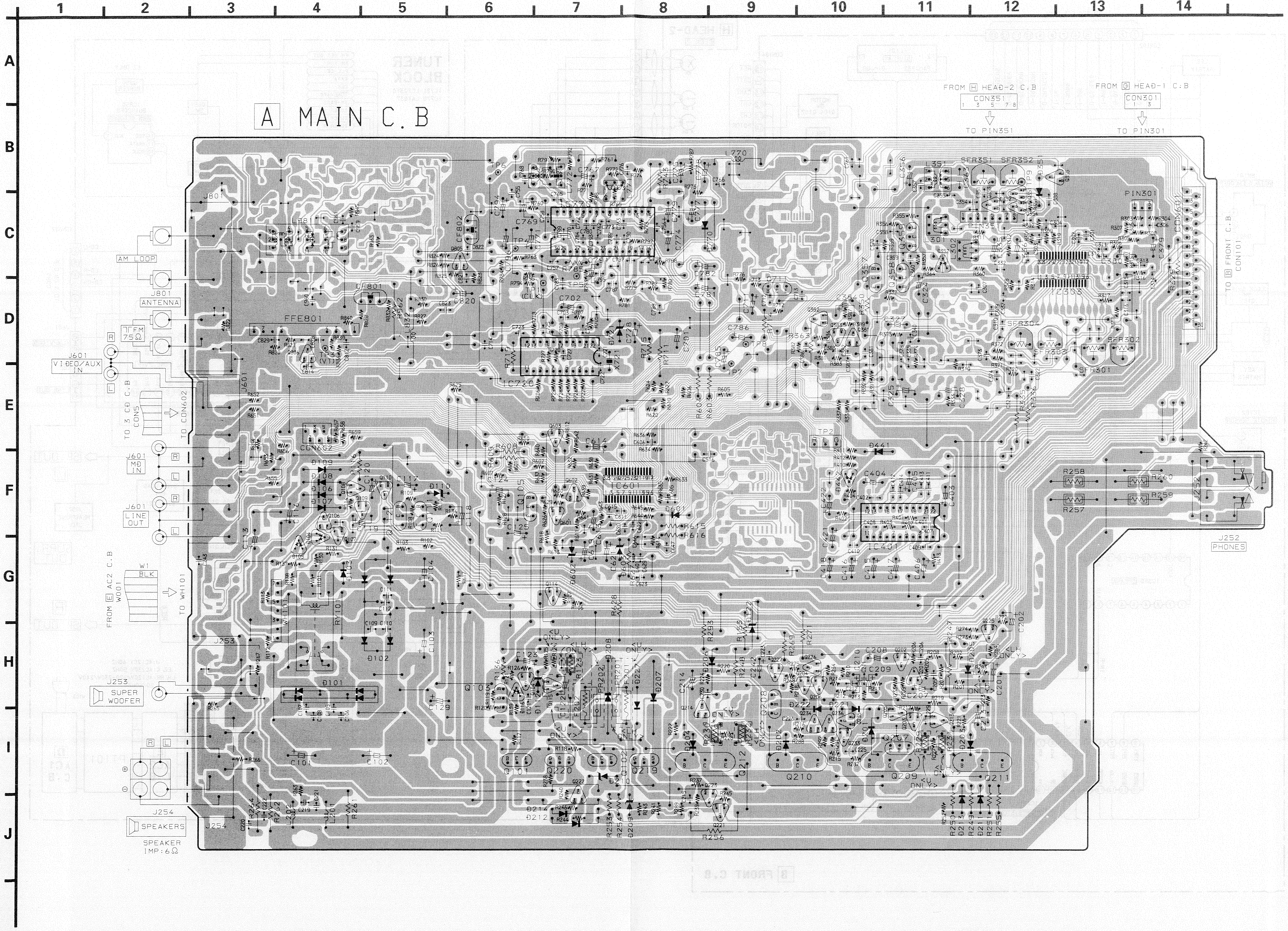
BLOCK DIAGRAM – 4 (TUNER : PRO)


I PRO C.B
CN501
MUTE 13
VCC 12
PRO-CE 11
DATA 10
CLK 9
A-GND 8
IN-MIC 7
OUT-MIC 6
OUT-L 5
OUT-R 4
IN-R 3
IN-L 2
A-GND 1
TO B FRONT C.B CN501
IC601
BU9262AFS
DSP/ECOH
C-IN
IN-MIC
VCC
LIN
RIN
C-OUT
LOUT
ROUT
VREF
OUT-MIC
VRIN
OUT
IN2
IN1
LPF2
OUT
IN
D/A
TEST
SCK
SLT
SI
CLKO
CLKI
NC
DS O
TE O
IN1
IN2
OUT
LPF1
IN
OUT
A/D
GND
IC701
TC9260FS
EVR
VDD
STI
ST
CE
DATE
VSS
CTI
CT
CS
CLK
IC501
NJW1102B F
DECODER
DBC3
DBC2
DBC1
LPIN
DBIN
IREF
VREFO
VREF
GND
L-R
L+R
SIMA
SIMB
SB
CMC
SMRO
NC
PSC3
PSC6
PSC2
PSC5
PSC1
PSC4
RLC5
RLC2
RLC1
RLC4
RLC7
RLC3
RLC8
RLC6
NC
SMRI
S-OUT
STC
STI
ST
C-OUT
CTC
CTI
CT
OUT-R
OUT-L
VSS
AUX2
PROAUXE
IDS
LLI
LBPF
RLI
RBPF
LT
RT
IN-L
IN-R
HOLDC
VCC
NDC3
NDC2
NDC1
VDD
DATA
CLK
S-MUTE SW Q502, 504
C-MUTE SW Q501, 503
MUTE SW Q212
MUTE SW Q201
MUTE SW Q312
MUTE SW Q301
+VP
SUR.AMP
AMP IN
AMP OUT
-VP
CENTER AMP
AMP IN
AMP OUT
+VP
-VP
J201
SURROUND OUT
L
R
J201
CENTER OUT
OVER LOAD Q209, 309
DET
AMP ON SW Q105, 106
+VP
-VP
PIN101
AC-L
GND
AC-L
D101
RS403
L-B-D-51
TO CON001 E AC2 C.B

BLOCK DIAGRAM – 5 (MAIN / FRONT)

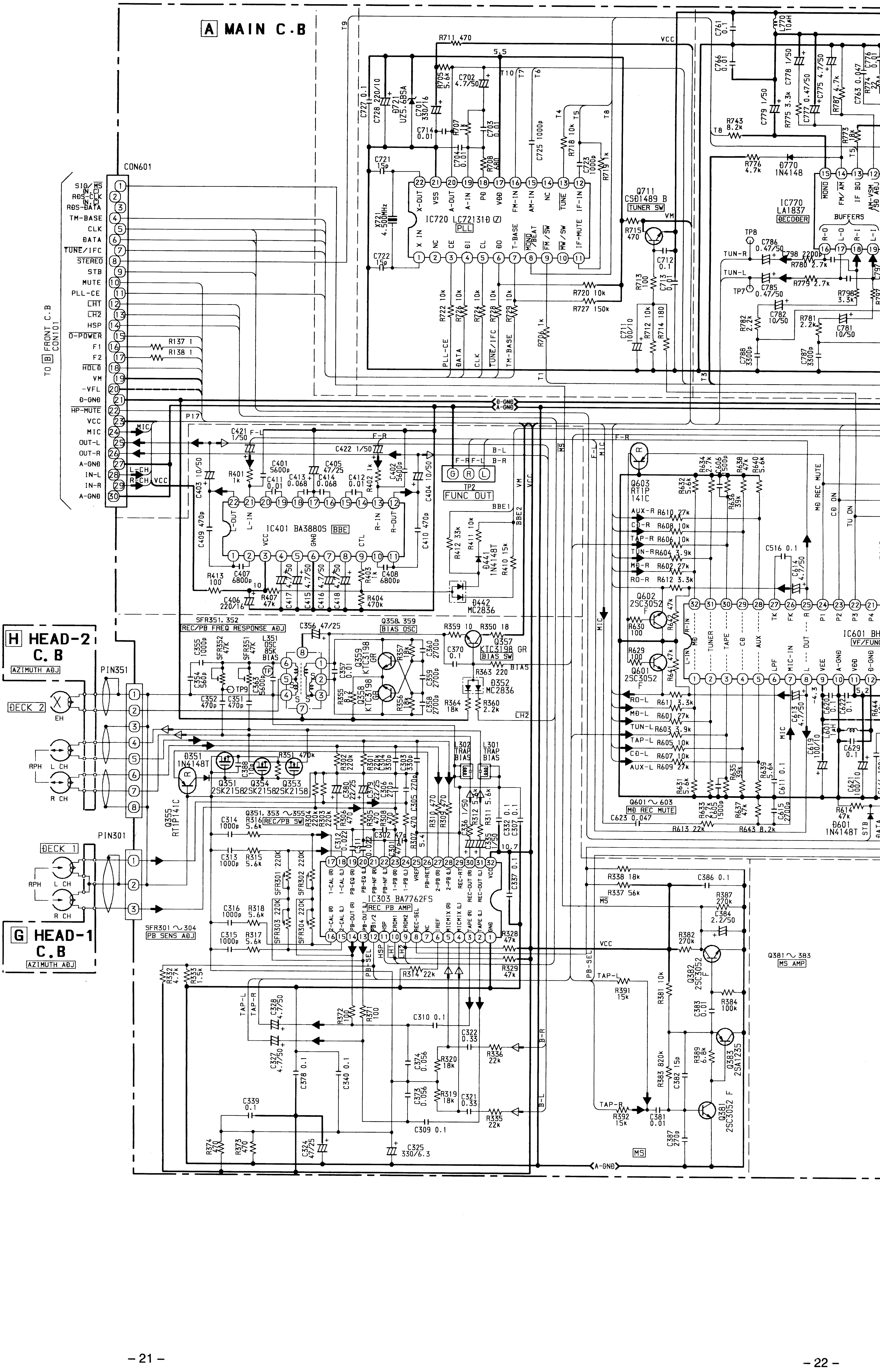

TO 3CD C.B CON6
CON102
LED MATRIX
FL101 DISPLAY
P1~P32
G1~G9
CON104
H HEAD-2
DECK 2
G HEAD-1
DECK 1
PIN351
PIN301
TUNER BLOCK
IC721 LC72310
IC770 LA1837
EZ ONLY
Q850 BUFFER
Q851 SW
Q852 SW
IC850 BU1920FS
RDS DECODER
SW101 ROTALY ENCODER
LED SW Q103
POWER SW Q108
CLOCK SHIFT SW Q101
RESET Q102
X101
KEY MATRIX
IC102 REMOTE SENSOR
MOTOR SW Q104, Q107
SOL1 SW Q106
SOL2 SW Q105
DIODE MATRIX
KEY SCAN SW Q301
IC101 LC866548V -5E54
μ-COM
IC601 MIC AMP
ALC Q601
J601 MIC1
J602 MIC2
TO F DECK C.B
REC/PB SW Q351, Q353 Q354, Q355
BIAS OSC Q358, Q359
BIAS OSC SW Q357
IC302 CXA1553P
DOLBY
IC301 HA2211
REC PB AMP
MS LEVEL DET Q381, Q382
IC401 BA3880S
BBE
MD REC MUTE Q603
MUTE Q602
IC601 BH3810FS
FUNC./V-F
MUTE Q601
CON602
TO 3 CD C.B CON5
J601
AUX/VIDEO
MD
LINE OUT
CON101
CON601
MUTE SW Q201
MUTE SW Q202
POWER AMP
Q203~212
Q233~236
AMP POWER SW Q226, Q227
SWITCHING Q219
SWITCHING DRIVER Q221 Q222 Q223
SWITCHING Q220
DC DET Q106, Q107
AC DET Q108, Q109
HOLD SW Q110
OVER LOAD DET Q213, Q214
J252 HEADPHONE JACK
SP OUT L
SURR. OUT
SP OUT R
VCC SW Q105
POWER SW Q114
VM REG. Q101~104 Q115
-VFL REG. Q111, Q112
D101
D102
WH101
WH001
E AC2 C.B
PT101
D AC1 C.B
W103
U:AC120V 60HZ
EZ, K:AC230V 50HZ
LH, HR:AC120V/220-230V/240V 50/60HZ
A MAIN C.B
IC380 SPEANA
IC201 SHIFT RESISTOR
IC401 DEQ/T-BASS/E-VR
TO D PRO C.B CN501
B FRONT C.B

WIRING – 1 (MAIN : U,LH)

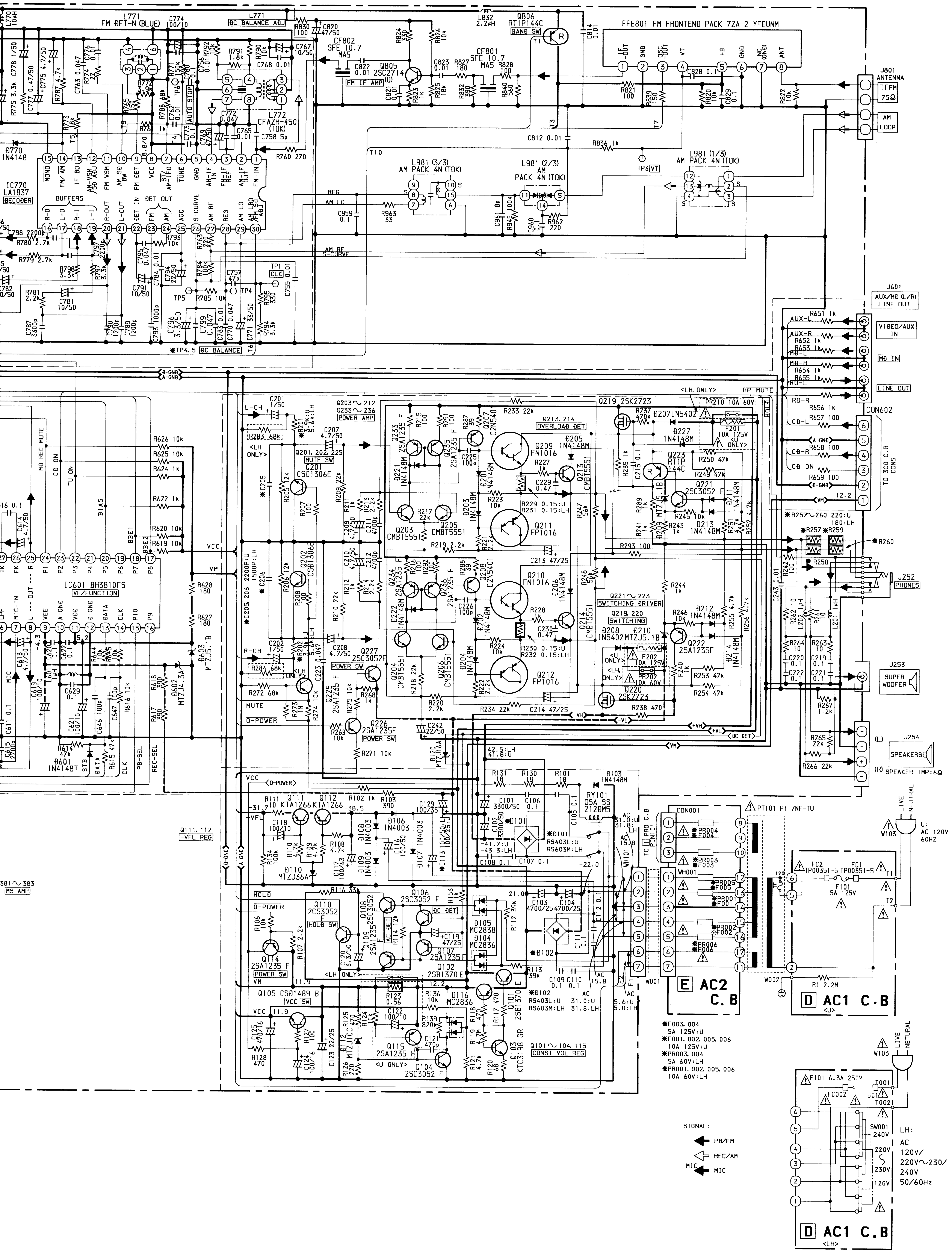


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
A MAIN C.B
FROM H HEAD-2 C.B
CON351
TO PIN351
FROM G HEAD-1 C.B
CON301
TO PIN301
TO B FRONT C.B. CON101
AM LOOP
J801
ANTENNA
FM 75Ω
J601
VIDEO/AUX IN
TO 3 CD C.B CON5
TO CON602
MD IN
LINE OUT
FROM E AC2 C.B W001
W1 BLK
TO WH101
J253
SUPER WOOFER
J254
SPEAKERS
SPEAKER IMP : 6Ω
J252
PHONES
IC720
IC601
IC401
IC303
FFE801
CF801
CF802
L770
SFR351
SFR352
SFR301
SFR302
SFR304
PIN301
CON601
CON602
TP2
D441
D101
D102
RY101
C101
C102
C103
Q101
Q220
Q102
Q210
Q209
Q211
Q212
R258
R257
R260
R259
R256

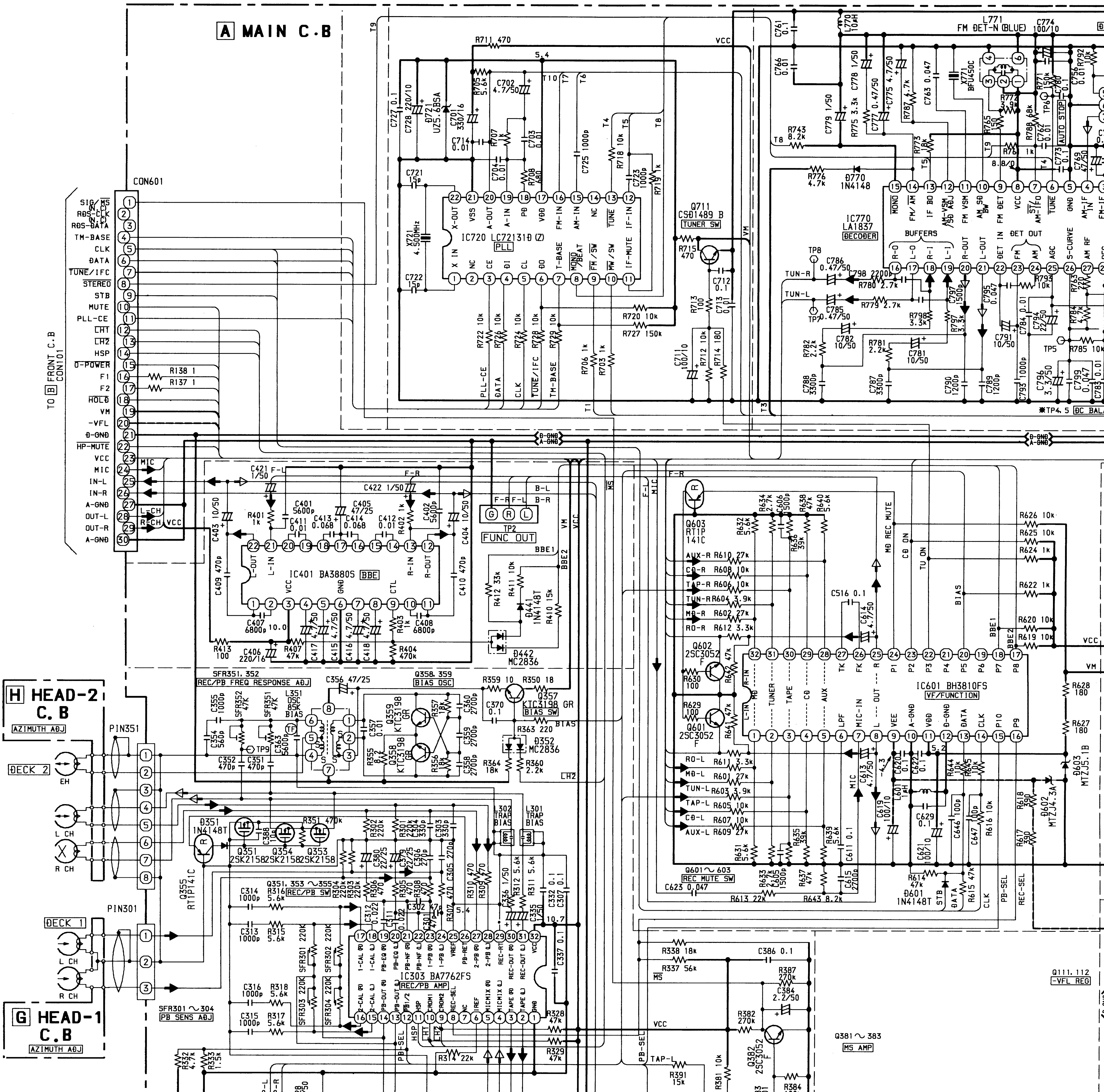
SCHEMATIC DIAGRAM – 1 (MAIN : U,LH)

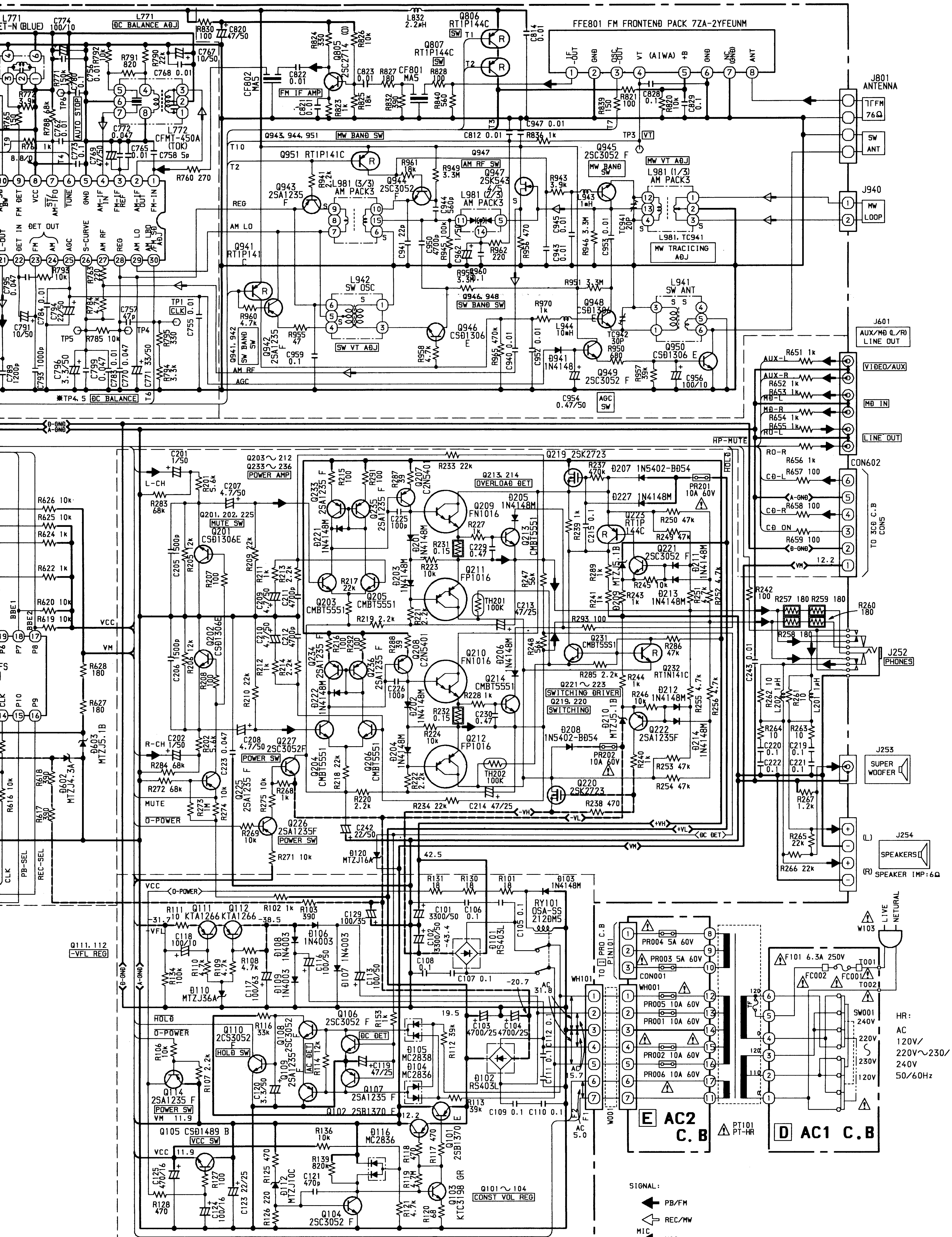


A MAIN C·B
CON601
SIG/MS (N.C)
RDS-CLK (N.C)
RDS-DATA
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
STB
MUTE
PLL-CE
LH1
LH2
HSP
D-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
OUT-L
OUT-R
A-GND
IN-L
IN-R
A-GND
TO B FRONT C.B CON101
R137 1
R138 1
IC720 LC72131D (Z) PLL
X721 4.500MHz
D721 UZ5.6BSA
R711 470
5.5
Q711 CSD1489 B TUNER SW
IC770 LA1837 DECODER
BUFFERS
L770 10µH
D770 1N4148
TP8
TP7
TUN-R
TUN-L
PLL-CE
DATA
CLK
TUNE/IFC
TM-BASE
P17
IC401 BA3880S BBE
FUNC OUT
TP2
BBE1
BBE2
D441 1N4148T
D442 MC2836
F-R
F-L
B-L
B-R
D-GND
A-GND
SFR351, 352 REC/PB FREQ RESPONSE ADJ
L351 OSC 85K BIAS
Q358, 359 BIAS OSC
Q358 KTC3198 GR
Q359 KTC3198 GR
Q357 KTC3198 GR BIAS SW
D352 MC2836
TP9
LH2
H HEAD-2 C.B
AZIMUTH ADJ
DECK 2
EH
RPH
L CH
R CH
PIN351
PIN301
DECK 1
G HEAD-1 C.B
AZIMUTH ADJ
D351 1N4148T
Q351, 353 ~ 355 REC/PB SW
Q351 2SK2158
Q354 2SK2158
Q353 2SK2158
Q355 RT1P141C
L302 TRAP BIAS
L301 TRAP BIAS
IC303 BA7762FS REC PB AMP
SFR301 ~ 304 PB SENS ADJ
PB-SEL
HSP
LH1
LH2
TAP-L
TAP-R
C325 330/6.3
C309 0.1
C310 0.1
A-GND
MS
Q603 RT1P 141C
Q602 2SC3052
Q601 2SC3052
Q601 ~ 603 MD REC MUTE
AUX-R
CD-R
TAP-R
TUN-R
MD-R
RD-R
RD-L
MD-L
TUN-L
TAP-L
CD-L
AUX-L
IC601 BH
VF/FUNC
MD REC MUTE
CD ON
TU ON
C516 0.1
D601 1N4148T
STB
R338 18k
R337 56k
C386 0.1
Q381 ~ 383 MS AMP
Q382 2SC3052 F
Q383 2SA1235
Q381 2SC3052 F
VCC

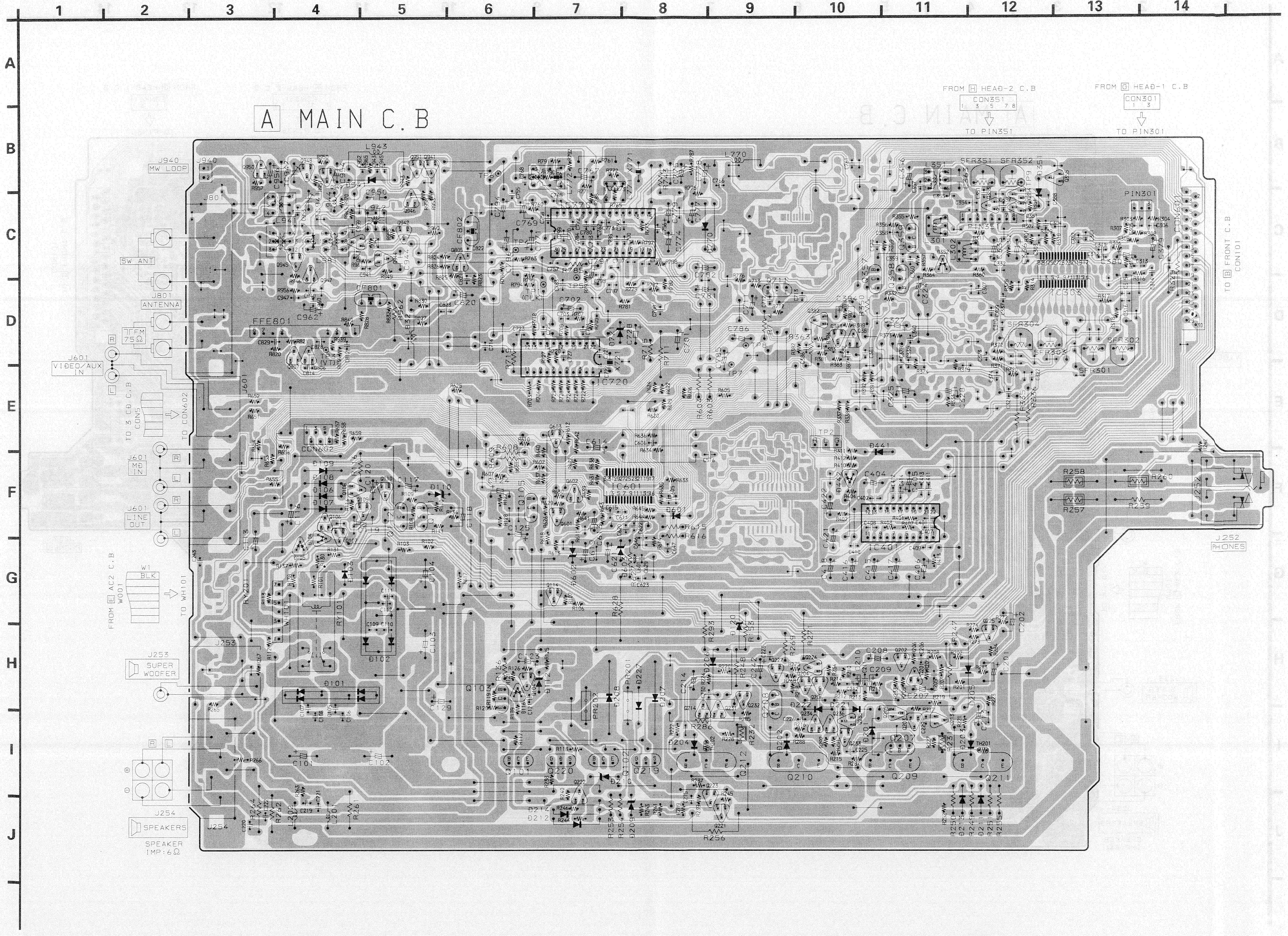

FFE801 FM FRONTEND PACK 7ZA-2 YFEUNM
IF OUT
GND
OSC OUT
VT
+B
GND
NC (GND)
ANT
J801 ANTENNA
FM 75Ω
AM LOOP
L771 FM DET-N (BLUE)
L771 DC BALANCE ADJ
L832 2.2μH
Q806 RT1P144C
BAND SW
CF802 SFE 10.7 MA5
Q805 2SC2714
FM IF AMP
CF801 SFE 10.7 MA5
L772 CFAZH-450 (TOK)
AUTO STOP
IC770 LA1837
DECODER
BUFFERS
DET OUT
MONO
FM/AM
IF DO
AM-VSM /SD ADJ
FM VSM
AM SD BW
FM DET
VCC
ST/ AM-IFO
TUNE
GND
AM-IF IN
FM-IF REF
AM-IF OUT
FM-IN
R-O
L-O
R-I
L-I
R-OUT
L-OUT
DET IN
FM
AM
AGC
S-CURVE
AM RF
REG
AM LO
AM LO ADJ
L981 (1/3) AM PACK 4N (TOK)
L981 (2/3) AM PACK 4N (TOK)
L981 (3/3) AM PACK 4N (TOK)
TP3 VT
REG
AM LO
AM RF S-CURVE
TP1 CLK
TP4
TP5
TP6
*TP4, 5 DC BALANCE
J601 AUX/MD (L/R) LINE OUT
VIDEO/AUX IN
MD IN
LINE OUT
AUX-L
AUX-R
MD-L
MD-R
RO-L
RO-R
CD-L
D-GND
CD-R
CD ON
CON602
TO 3CD C.B CON5
D-GND
A-GND
IC601 BH3810FS
VF/FUNCTION
MD REC MUTE
CD ON
TU ON
BIAS
BBE1
BBE2
VCC
VM
MIC
MIC-IN
OUT
VEE
A-GND
VDD
D-GND
DATA
CLK
P10
P9
STB
DATA
CLK
PB-SEL
REC-SEL
D601 1N4148T
D602 MTZJ4.3A
D603 MTZJ5.1B
L-CH
R-CH
<LH ONLY>
Q203~212 Q233~236
POWER AMP
Q201, 202, 225
MUTE SW
Q201 CSD1306E
Q202 CSD1306E
Q203 CMBT5551
Q204 CMBT5551
Q205 CMBT5551
Q206 CMBT5551
Q207 C2N5401
Q208 C2N5401
Q209 FN1016
Q210 FN1016
Q211 FP1016
Q212 FP1016
Q213, 214 OVERLOAD DET
Q213 CMBT5551
Q214 CMBT5551
Q219 2SK2723
Q220 2SK2723
Q221 2SC3052 F
Q222 2SA1235F
Q223 RT1P144C
Q221~223 SWITCHING DRIVER
Q219, 220 SWITCHING
Q226 2SA1235F
Q227 2SC3052F
POWER SW
MUTE
D-POWER
R229 0.15:U
R231 0.15:LH
R230 0.15:U
R232 0.15:LH
<LH ONLY>
HP-MUTE
PR210 10A 60V
F201 10A 125V <U ONLY>
F202 10A 125V <U ONLY>
PR202 10A 60V <LH ONLY>
HOLD
*R257~260 220:U 180:LH
J252 PHONES
J253 SUPER WOOFER
J254 SPEAKERS
(L)
(R)
SPEAKER IMP:6Ω
-VH
-VL
+VH
+VL
DC DET
VM
42.5:LH 41.8:U
Q111, 112 -VFL REG
Q111 KTA1266
Q112 KTA1266
D110 MTZJ36A
RY101 OSA-SS 212DM5
*D101 RS403L:U RS603M:LH
-41.7:U
-43.3:LH
D105 MC2838
D104 MC2836
*D102 RS403L:U RS603M:LH
Q110 2CS3052
HOLD SW
Q106 2SC3052 F
DC DET
Q108 2SC3052
Q109 2SA1235
AC DET
Q107 2SA1235 F
Q102 2SB1370 E
Q114 2SA1235 F
POWER SW
Q105 CSD1489 B
VCC SW
Q115 2SA1235 F
Q104 2SC3052 F
Q103 KTC3198 GR
Q101 2SB1370
Q101~104, 115 CONST VOL REG
D112 MTZJ10C
D116 MC2836
<U ONLY>
<LH ONLY>
AC 31.0:U 31.8:LH
AC 15.8
AC 5.6:U 5.0:LH
TO PRO C.B PIN101
CON001
WH001
WH101
W001
W002
PT101 PT 7NF-TU
E AC2 C.B
D AC1 C.B <U>
FC2 TP00351-5
FC1 TP00351-5
F101 5A 125V
R1 2.2M
W103
LIVE
NEUTRAL
U: AC 120V 60HZ
*F003, 004
5A 125V:U
*F001, 002, 005, 006
10A 125V:U
*PR003, 004
5A 60V:LH
*PR001, 002, 005, 006
10A 60V:LH
381~383 MS AMP
F101 6.3A 250V
FC002
T001
T002
SW001
240V
220V
230V
120V
LH:
AC
120V/
220V~230/
240V
50/60Hz
D AC1 C.B <LH>
SIGNAL:
PB/FM
REC/AM
MIC

SCHEMATIC DIAGRAM – 2 (MAIN : HR)


A MAIN C·B
CON601
TO B FRONT C.B CON101
SIG/MS
RDS-CLK
RDS-DATA
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
STB
MUTE
PLL-CE
LH1
LH2
HSP
D-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
IC720 LC72131D (Z)
PLL
X721 4.500MHz
Q711 CSD1489 B
TUNER SW
IC770 LA1837
DECODER
BUFFERS
L771 FM DET-N (BLUE)
AUTO STOP
IC401 BA3880S
BBE
TP2
FUNC OUT
D441 1N4148T
D442 MC2836
SFR351, 352
REC/PB FREQ RESPONSE ADJ
L351 OSC 85K BIAS
Q358, 359
BIAS OSC
Q357 KTC3198 GR
BIAS SW
D352 MC2836
H HEAD-2 C.B
AZIMUTH ADJ
DECK 2
PIN351
EH
L CH
R CH
D351 1N4148T
Q351 2SK2158
Q354 2SK2158
Q353 2SK2158
Q355 RT1P141C
L302 TRAP BIAS
L301 TRAP BIAS
Q351, 353 ～ 355
REC/PB SW
IC303 BA7762FS
REC/PB AMP
DECK 1
PIN301
G HEAD-1 C.B
AZIMUTH ADJ
SFR301 ～ 304
PB SENS ADJ
Q603 RT1P 141C
Q602 2SC3052
Q601 2SC3052
Q601 ～ 603
REC MUTE SW
IC601 BH3810FS
VF/FUNCTION
D601 1N4148T
D602 MTZJ4.3A
D603 MTZJ5.1B
Q381 ～ 383
MS AMP
Q382 2SC3052
Q383 2SA1235
Q381 2SC3052 F
Q111, 112
-VFL REG
MS
A-GND
*TP4, 5 DC BAL


FFE801 FM FRONTEND PACK 7ZA-2YFEUNM
J801 ANTENNA
FM 76Ω
SW ANT
J940
MW LOOP
MW TRACING ADJ
L981, TC941
L981 (1/3) AM PACK3
MW VT ADJ
MW BAND SW
AM RF SW
SW VT ADJ
SW BAND SW
L942 SW OSC
L941 SW ANT
AGC SW
FM IF AMP
DC BALANCE ADJ
AUTO STOP
CFMT-450A (TOK)
J601 AUX/MD (L/R) LINE OUT
VIDEO/AUX
MD IN
LINE OUT
CON602
TO 3CD C.B CON5
HP-MUTE
POWER AMP
MUTE SW
OVERLOAD DET
SWITCHING DRIVER
SWITCHING
POWER SW
J252 PHONES
J253 SUPER WOOFER
J254 SPEAKERS
SPEAKER IMP:6Ω
-VFL REG
HOLD SW
AC DET
DC DET
VCC SW
CONST VOL REG
RY101 OSA-SS 212DM5
TO PRO C.B PIN101
E AC2 C.B
D AC1 C.B
PT101 PT-HR
F101 6.3A 250V
LIVE
NETURAL
W103
HR: AC 120V/ 220V∼230/ 240V 50/60Hz
SIGNAL:
PB/FM
REC/MW
MIC

WIRING – 2 (MAIN : HR)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A
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C
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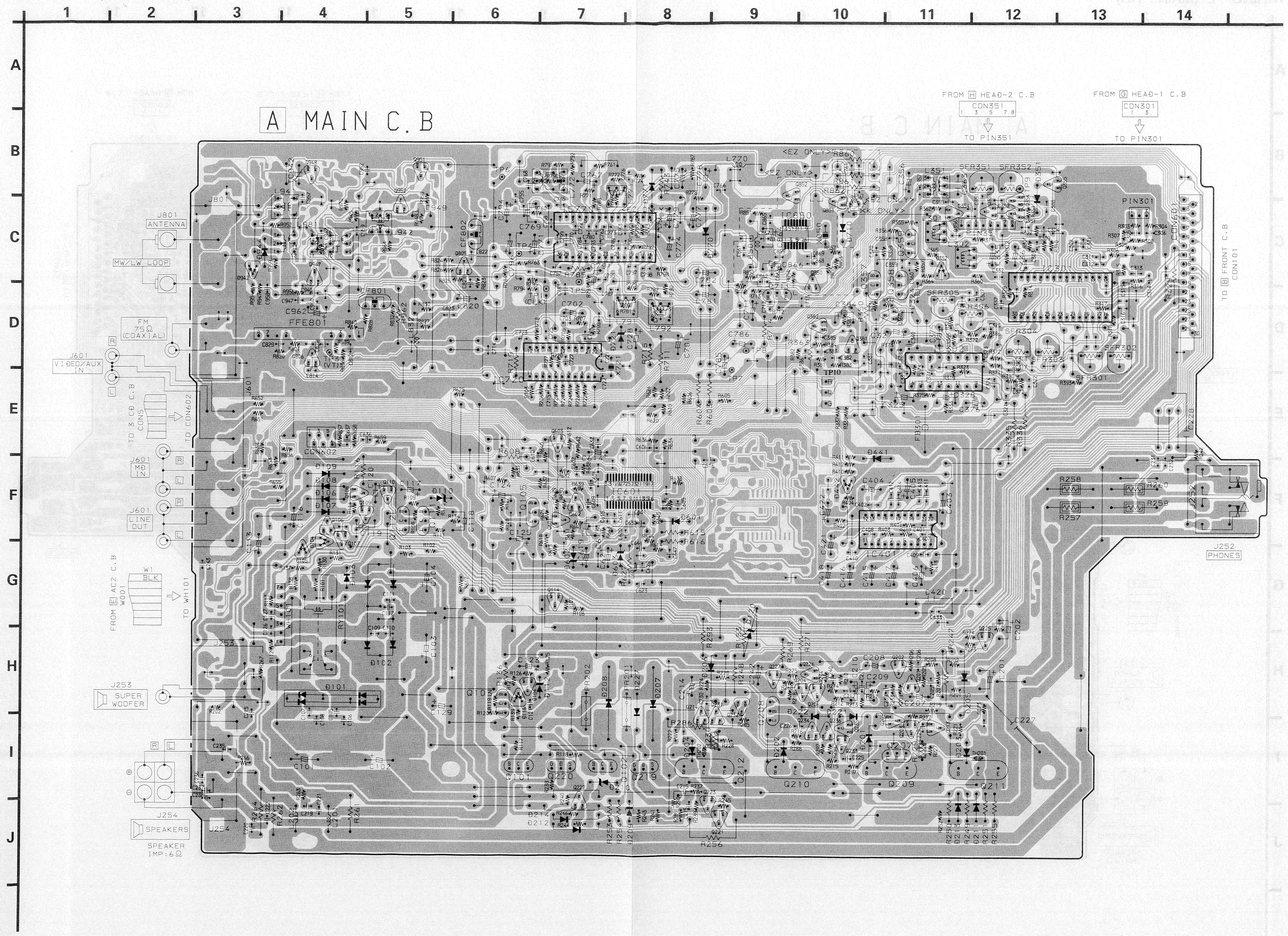
E
F
G
H
I
J
A MAIN C.B
FROM H HEAD-2 C.B
CON351
1 3 5 7 8
TO PIN351
FROM G HEAD-1 C.B
CON301
1 3
TO PIN301
J940
MW LOOP
SW ANT
J801
ANTENNA
TFM
75Ω
J601
VIDEO/AUX
IN
R
L
TO 3 CD C.B
CON5
TO CON602
J601
MD
IN
J601
LINE
OUT
FROM E AC2 C.B
W001
W1
BLK
TO WH101
J253
SUPER
WOOFER
J254
SPEAKERS
SPEAKER
IMP:6Ω
⊕
⊖
J252
PHONES
TO B FRONT C.B
CON101
L943
L770
L351
SFR351
SFR352
PIN301
CON301
IC770
IC720
IC601
IC401
IC303
SFR304
SFR303
SFR302
SFR301
CON602
FFE801
CF801
CF802
TP2
TP7
TP8
TP9
R258
R257
R259
R260
RY101
RY201
Q101
Q102
Q103
Q209
Q210
Q211
Q220
D101
D102
D441
R256
C101
C102

WIRING – 3 (MAIN : EZ,K)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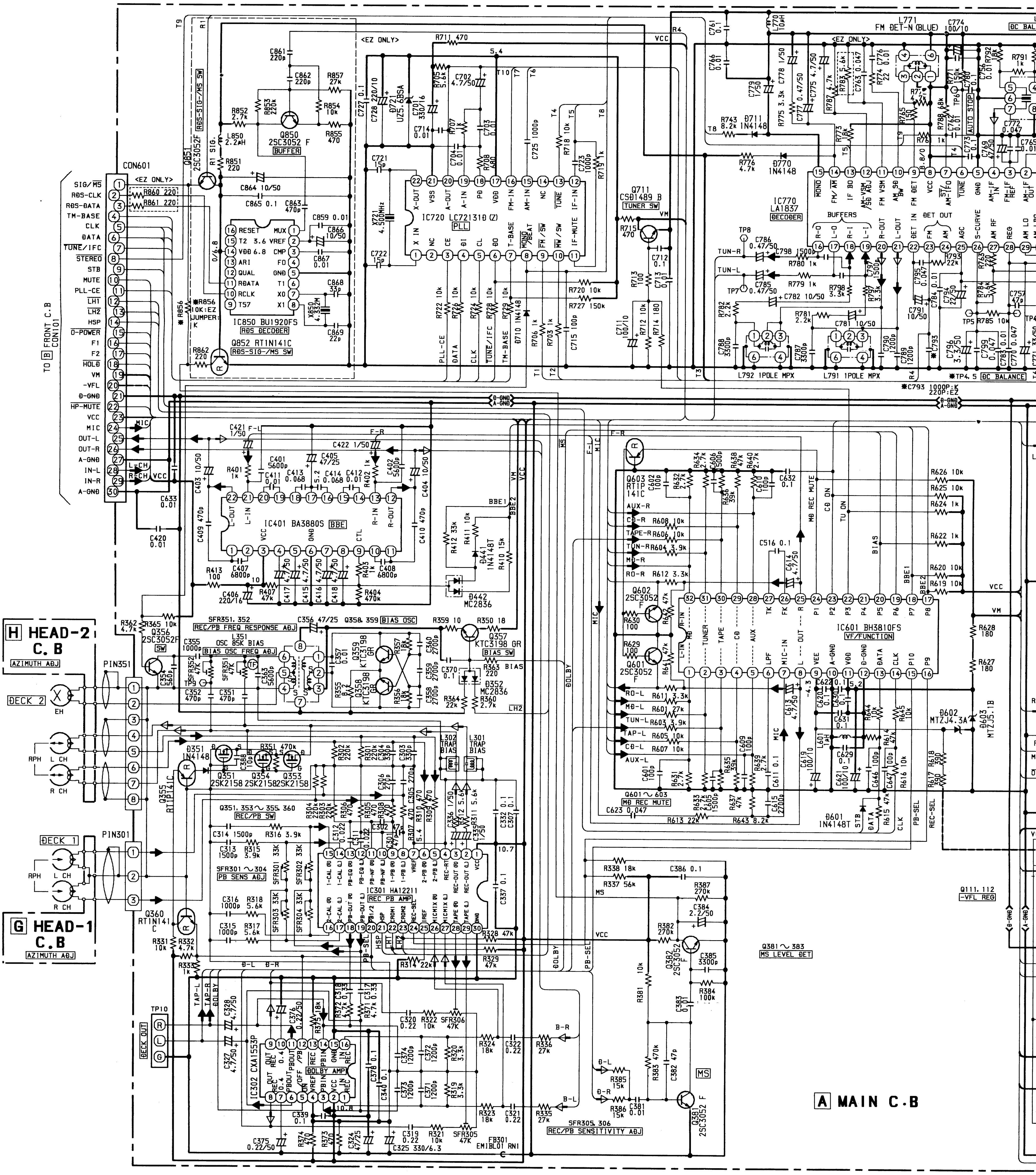
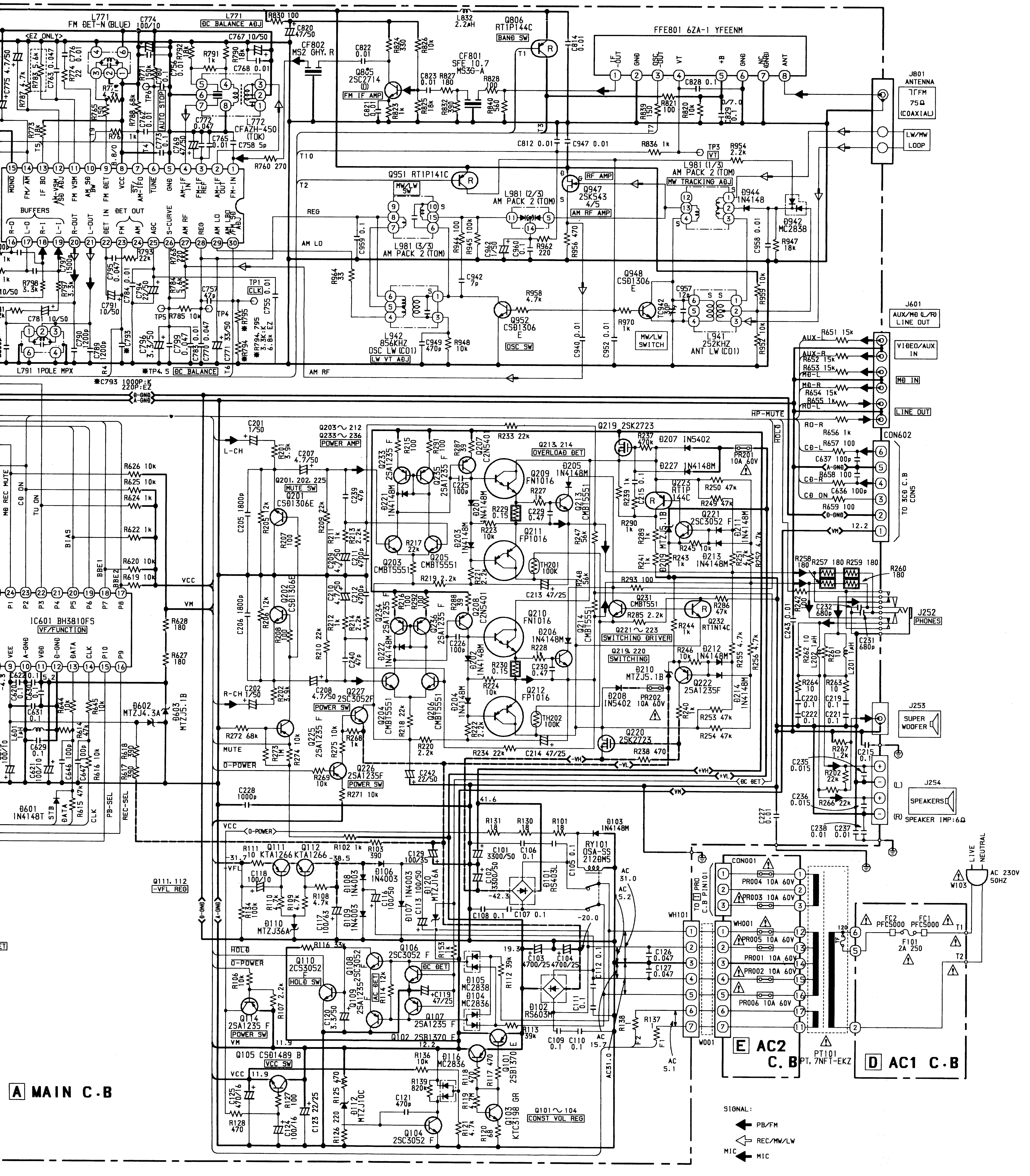
13
14
A
B
C
D
E
F
G
H
I
J
A MAIN C.B
FROM H HEAD-2 C.B
CON351
1 3 5 7 8
TO PIN351
FROM G HEAD-1 C.B
CON301
1 3
TO PIN301
TO B FRONT C.B CON101
J801
ANTENNA
MW/LW LOOP
FM 75Ω (COAXIAL)
J601
VIDEO/AUX IN
R
L
TO 3 CD C.B CON5
TO CON602
J601
MD IN
J601
LINE OUT
FROM E AC2 C.B W001
W1
BLK
TO WH101
J253
SUPER WOOFER
J254
SPEAKERS
SPEAKER IMP : 6Ω
J252
PHONES
<EZ ONLY>
<KK ONLY>
IC850
IC301
IC601
IC401
IC720
CON601
CON602
PIN301
PIN351

SCHEMATIC DIAGRAM – 3 (MAIN : EZ,K)

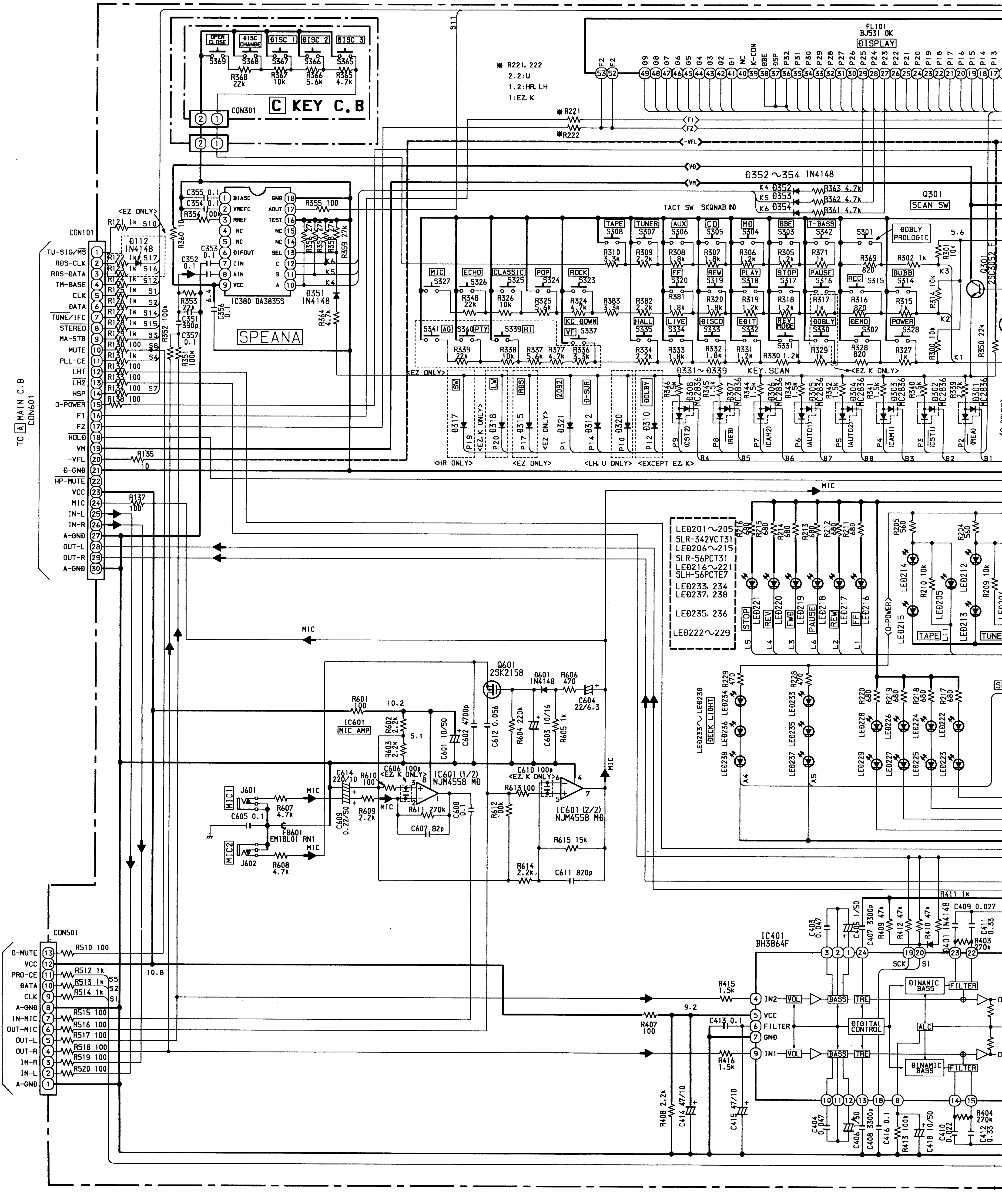


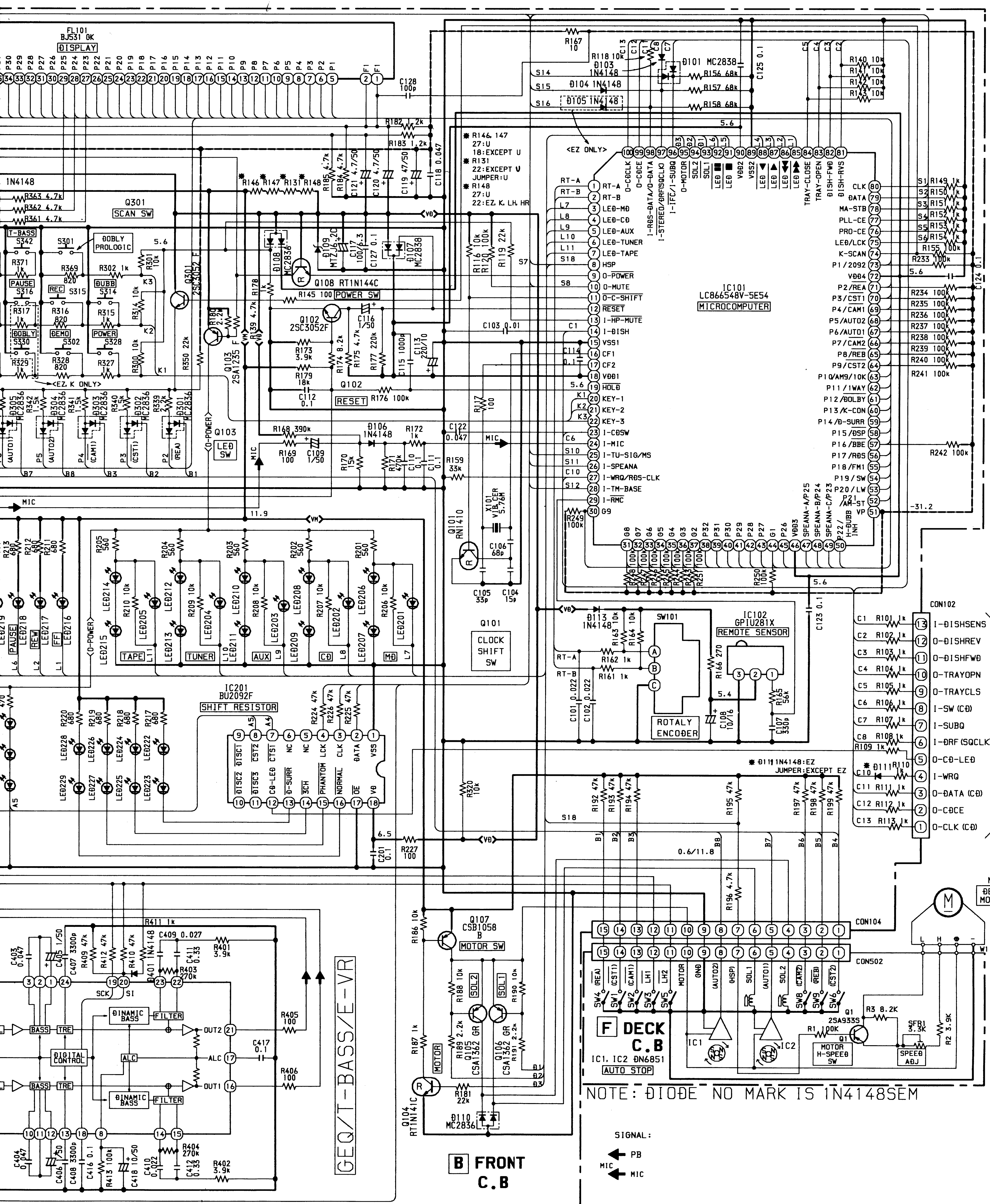
CON601
TO B FRONT C.B CON101
SIG/MS
RDS-CLK
RDS-DATA
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
STB
MUTE
PLL-CE
LH1
LH2
HSP
O-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
OUT-L
OUT-R
A-GND
IN-L
IN-R
A-GND
<EZ ONLY>
IC850 BU1920FS
RDS DECODER
Q850 2SC3052 F
BUFFER
Q851 2SC3052F
RDS-SIG-/MS SW
Q852 RT1N141C
RDS-SIG-/MS SW
X850 4.332M
IC720 LC72131D (Z)
PLL
X721 4.500MHz
D721 UZ5.6BSA
Q711 CSD1489 B
TUNER SW
IC770 LA1837
DECODER
BUFFERS
L771 FM DET-N (BLUE)
L770 10μH
L792 1POLE MPX
L791 1POLE MPX
DC BALANCE
AUTO STOP
*TP4, 5 DC BALANCE
*C793 1000P:K 220P:EZ
IC401 BA3880S BBE
D441 1N4148T
D442 MC2836
SFR351, 352 REC/PB FREQ RESPONSE ADJ
C356 47/25 Q358, 359 BIAS OSC
L351 OSC 85K BIAS
BIAS OSC FREQ ADJ
Q356 2SC3052F SW
Q357 KTC3198 GR BIAS SW
Q358 KTC3198 GR
Q359 KTC3198 GR
D352 MC2836
H HEAD-2 C.B AZIMUTH ADJ
DECK 2
EH
RPH
L CH
R CH
PIN351
D351 1N4148
Q351 2SK2158
Q354 2SK2158
Q353 2SK2158
Q355 RT1P141C
Q351, 353~355, 360 REC/PB SW
L302 TRAP BIAS
L301 TRAP BIAS
SFR301~304 PB SENS ADJ
IC301 HA12211
REC PB AMP
DECK 1
PIN301
G HEAD-1 C.B AZIMUTH ADJ
Q360 RT1N141 C
TP10
DECK OUT
IC302 CXA1553P
DOLBY AMP
FB301 EM1BL01 RN1
SFR305, 306 REC/PB SENSITIVITY ADJ
Q381~383 MS LEVEL DET
Q382 2SC3052 F
Q381 2SC3052 F
MS
Q603 RT1P141C
Q601~603 MD REC MUTE
Q602 2SC3052
Q601 2SC3052
IC601 BH3810FS
VF/FUNCTION
AUX-R
CD-R
TAPE-R
TUN-R
MD-R
RO-R
RO-L
MD-L
TUN-L
TAP-L
CD-L
AUX-L
D601 1N4148T
D602 MTZJ4.3A
D603 MTZJ5.1B
Q111, 112 -VFL REG
A MAIN C.B
BIAS
BBE1
BBE2
VCC
VM
DOLBY
PB-SEL
REC-SEL



A MAIN C·B
E AC2 C·B
D AC1 C·B
FFE801 6ZA-1 YFEENM
J801 ANTENNA FM 75Ω (COAXIAL)
LW/MW LOOP
L771 FM DET-N (BLUE)
CF802 MS2 GHY, R
CF801 SFE 10.7 MS3G-A
Q806 RT1P144C BAND SW
Q805 2SC2714 FM IF AMP
L772 CFAZH-450 (TDK)
Q951 RT1P141C MW/LW SW
L981 (3/3) AM PACK 2 (TDM)
L981 (2/3) AM PACK 2 (TDM)
L981 (1/3) AM PACK 2 (TDM) MW TRACKING ADJ
Q947 2SK543 4/5 AM RF AMP
D944 1N4148
D942 MC2838
Q948 CSD1306 E
L941 252KHZ ANT LW (CO1)
L942 856KHZ OSC LW (CO1) LW VT ADJ
Q952 CSD1306 E OSC SW
MW/LW SWITCH
L791 1POLE MPX
*C793 1000P:K 220P:EZ
IC601 BH3810FS VF/FUNCTION
J601 AUX/MD (L/R) LINE OUT
VIDEO/AUX IN
MD IN
LINE OUT
CON602 TO 3CD C.B CON5
Q201, 202, 225 MUTE SW
Q203~212 Q233~236 POWER AMP
Q213, 214 OVERLOAD DET
Q219 2SK2723
Q220 2SK2723
Q221~223 SWITCHING DRIVER
Q219, 220 SWITCHING
Q227 2SC3052F POWER SW
Q226 2SA1235F POWER SW
J252 PHONES
J253 SUPER WOOFER
J254 SPEAKERS (L) (R) SPEAKER IMP:6Ω
Q111, 112 -VFL REG
Q110 2CS3052 HOLD SW
Q108 2SC3052 AC DET
Q106 2SC3052 F DC DET
Q114 2SA1235 F POWER SW
Q105 CSD1489 B VCC SW
Q101~104 CONST VOL REG
RY101 DSA-SS 212DM5
PT101 PT. 7NFT-EKZ
AC 230V 50HZ
LIVE NEUTRAL
W103
F101 2A 250
FC2 PFC5000 FC1 PFC5000
CON001 WH001 WH101 W001
TO PRO C.B PIN101
SIGNAL:
PB/FM
REC/MW/LW
MIC

SCHEMATIC DIAGRAM – 4 (FRONT)

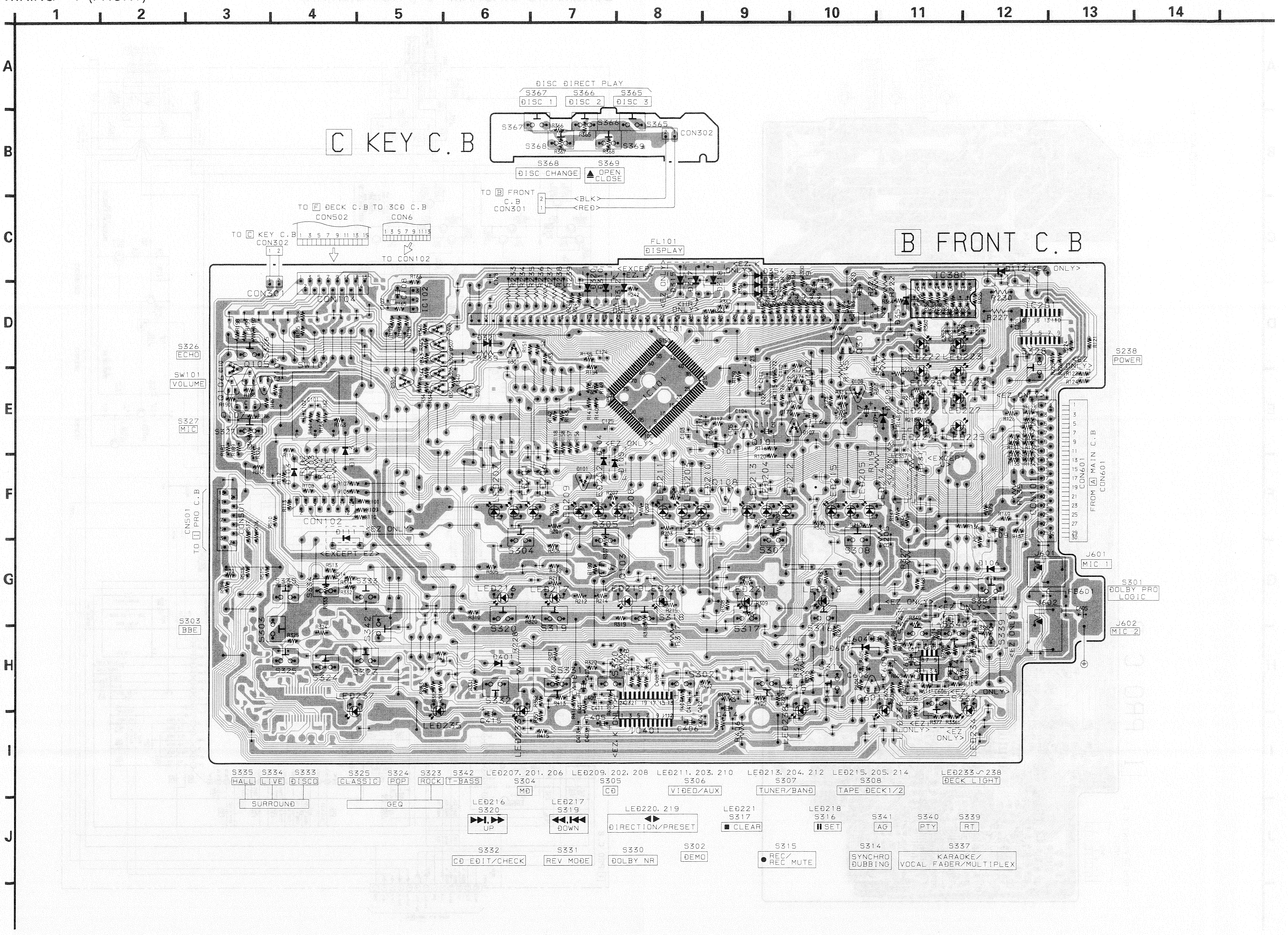

C KEY C.B
CON301
OPEN CLOSE
DISC CHANGE
DISC 1
DISC 2
DISC 3
S369 S368 S367 S366 S365
R368 22k
R367 10k
R366 5.6k
R365 4.7k
✱ R221, 222
2.2:U
1.2:HR, LH
1:EZ, K
FL101
BJ531 GK
DISPLAY
IC380 BA3835S
SPEANA
D351 1N4148
D352～354 1N4148
TACT SW SKQNAB (N)
Q301
SCAN SW
2SC3052 F
DOLBY PROLOGIC
KEY.SCAN
D331～D339
<EZ ONLY>
<EZ K ONLY>
<HR ONLY>
<LH, U ONLY>
<EXCEPT EZ K>
CON101
TO A MAIN C.B CON601
TU-SIG/MS
RDS-CLK
RDS-DATA
TM-BASE
CLK
DATA
TUNE/IFC
STEREO
MA-STB
MUTE
PLL-CE
LHT
LHZ
HSP
D-POWER
F1
F2
HOLD
VM
-VFL
D-GND
HP-MUTE
VCC
MIC
IN-L
IN-R
A-GND
OUT-L
OUT-R
A-GND
LED201～205 SLR-342VCT31
LED206～215 SLR-56PCT31
LED216～221 SLH-56PCTE7
LED233, 234
LED237, 238
LED235, 236
LED222～229
STOP
REV
FWD
PAUSE
REW
FF
TAPE
TUNER
DECK LIGHT
Q601 2SK2158
D601 1N4148
IC601 MIC AMP
IC601 (1/2) NJM4558 MD
IC601 (2/2) NJM4558 MD
MIC1
MIC2
J601
J602
FB601 EMIBL01 RN1
CON501
TO I PRO C.B CN501
D-MUTE
VCC
PRO-CE
DATA
CLK
A-GND
IN-MIC
OUT-MIC
OUT-L
OUT-R
IN-R
IN-L
A-GND
IC401 BH3864F
IN2
VCC
FILTER
GND
IN1
VOL
BASS
TRE
DIGITAL CONTROL
DINAMIC BASS
FILTER
ALC
SCK
SI


FL101
BJ531 GK
DISPLAY
Q301
SCAN SW
IC101
LC866548V-5E54
MICROCOMPUTER
IC102
GP1U281X
REMOTE SENSOR
SW101
ROTALY ENCODER
Q101
CLOCK SHIFT SW
X101
VIB.CER 5.76M
Q108 RT1N144C
POWER SW
Q102
2SC3052F
RESET
Q103
2SA1235 F
LED SW
IC201
BU2092F
SHIFT RESISTOR
GEQ/T-BASS/E-VR
DINAMIC BASS
FILTER
DIGITAL CONTROL
ALC
BASS
TRE
Q107
CSB1058
MOTOR SW
Q105
CSA1362 GR
Q106
CSA1362 GR
SOL2
SOL1
MOTOR
Q104
RT1N141C
D110
MC2836
B FRONT C.B
F DECK C.B
IC1, IC2 DN6851
AUTO STOP
M1
DECK MOTOR
MOTOR H-SPEED SW
SPEED ADJ
CON102
CON104
CON502
TO 3CD C.B CON6
I-DISHSENS
O-DISHREV
O-DISHFWD
O-TRAYOPN
O-TRAYCLS
I-SW (CD)
I-SUBQ
I-DRF (SQCLK)
O-CD-LED
I-WRQ
O-DATA (CD)
O-CDCE
O-CLK (CD)
TAPE
TUNER
AUX
CD
MD
PAUSE
REW
FF
T-BASS
DOLBY PROLOGIC
REC
DUBB
POWER
DEMO
DOLBY
<EZ ONLY>
<EZ K ONLY>
* R146, 147 27:U 18:EXCEPT U
* R131 22:EXCEPT U JUMPER:U
* R148 27:U 22:EZ, K, LH, HR
* D111 1N4148:EZ JUMPER:EXCEPT EZ

NOTE: DIODE NO MARK IS 1N4148SEM

SIGNAL:
PB
MIC

WIRING – 4 (FRONT)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A
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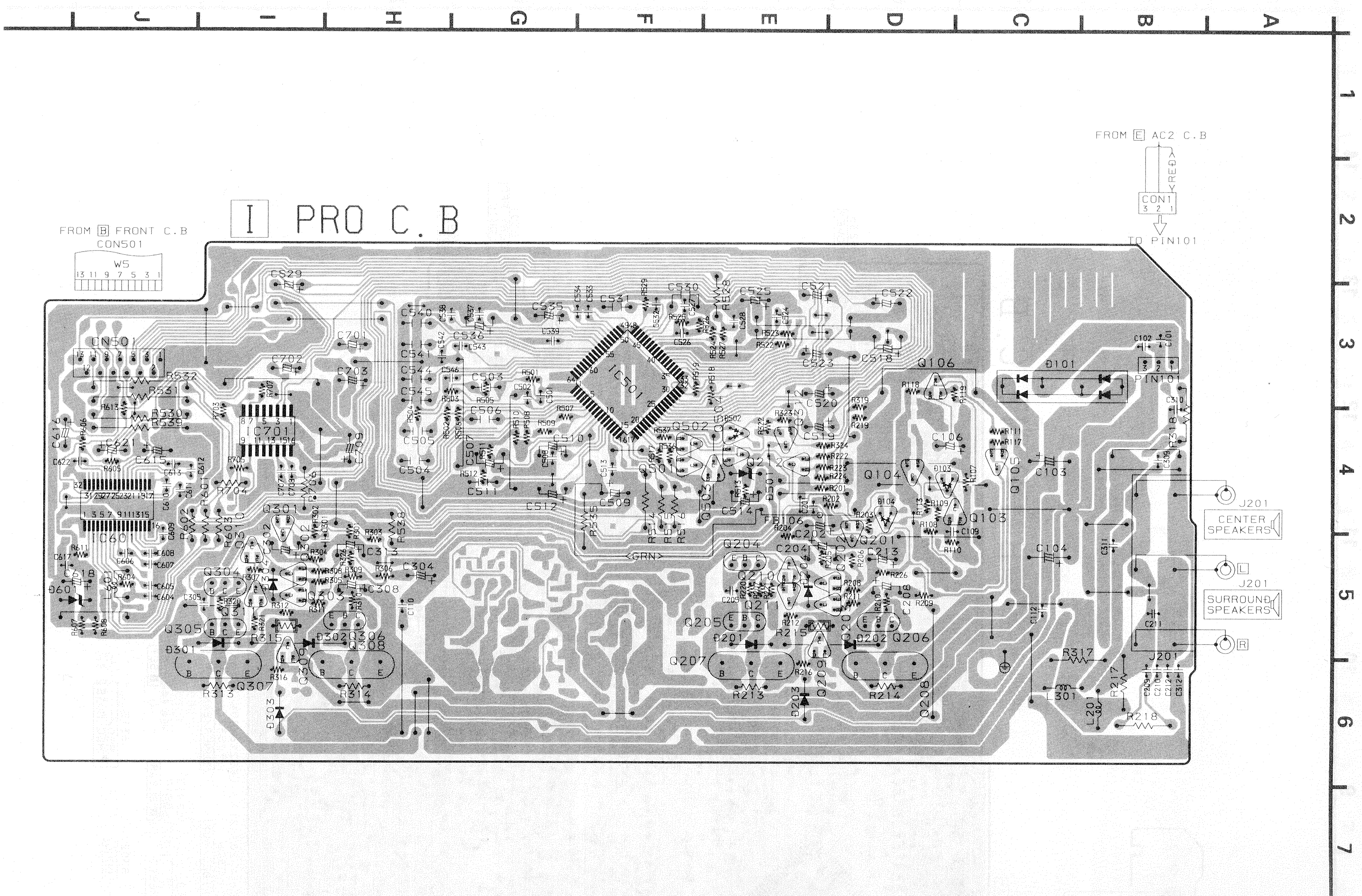
F
G
H
I
J
C KEY C.B
DISC DIRECT PLAY
S367
DISC 1
S366
DISC 2
S365
DISC 3
CON302
S368
DISC CHANGE
S369
▲ OPEN CLOSE
TO B FRONT C.B CON301
<BLK>
<RED>
TO F DECK C.B CON502
TO 3CD C.B CON6
TO C KEY C.B CON302
TO CON102
FL101
DISPLAY
B FRONT C.B
CON301
CON104
CON102
CON101
IC101
IC102
IC380
IC401
<EXCEPT EZ>
<EZ ONLY>
<EZ.K ONLY>
S326
ECHO
SW101
VOLUME
S327
MIC
CN501
TO I PRO C.B
S303
BBE
S238
POWER
CON601
FROM A MAIN C.B
J601
MIC 1
S301
DOLBY PRO LOGIC
J602
MIC 2
S335
HALL
S334
LIVE
S333
DISCO
SURROUND
S325
CLASSIC
S324
POP
S323
ROCK
S342
T-BASS
GEQ
LED207, 201, 206
S304
MD
LED209, 202, 208
S305
CD
LED211, 203, 210
S306
VIDEO/AUX
LED213, 204, 212
S307
TUNER/BAND
LED215, 205, 214
S308
TAPE DECK1/2
LED233∽238
DECK LIGHT
LED216
S320
▶▶I, ▶▶
UP
LED217
S319
◀◀, I◀◀
DOWN
LED220, 219
◀▶
DIRECTION/PRESET
LED221
S317
■ CLEAR
LED218
S316
II SET
S341
AG
S340
PTY
S339
RT
S332
CD EDIT/CHECK
S331
REV MODE
S330
DOLBY NR
S302
DEMO
S315
● REC/ REC MUTE
S314
SYNCHRO DUBBING
S337
KARAOKE/ VOCAL FADER/MULTIPLEX

WIRING – 5 (PRO : U,LH,HR)


I PRO C.B
FROM B FRONT C.B
CON501
W5
13 11 9 7 5 3 1
FROM E AC2 C.B
RED
CON1
3 2 1
TO PIN101
PIN101
D101
IC501
IC601
IC701
CN501
<GRN>
J201
CENTER SPEAKERS
L
SURROUND SPEAKERS
R
A
B
C
D
E
F
G
H
I
J
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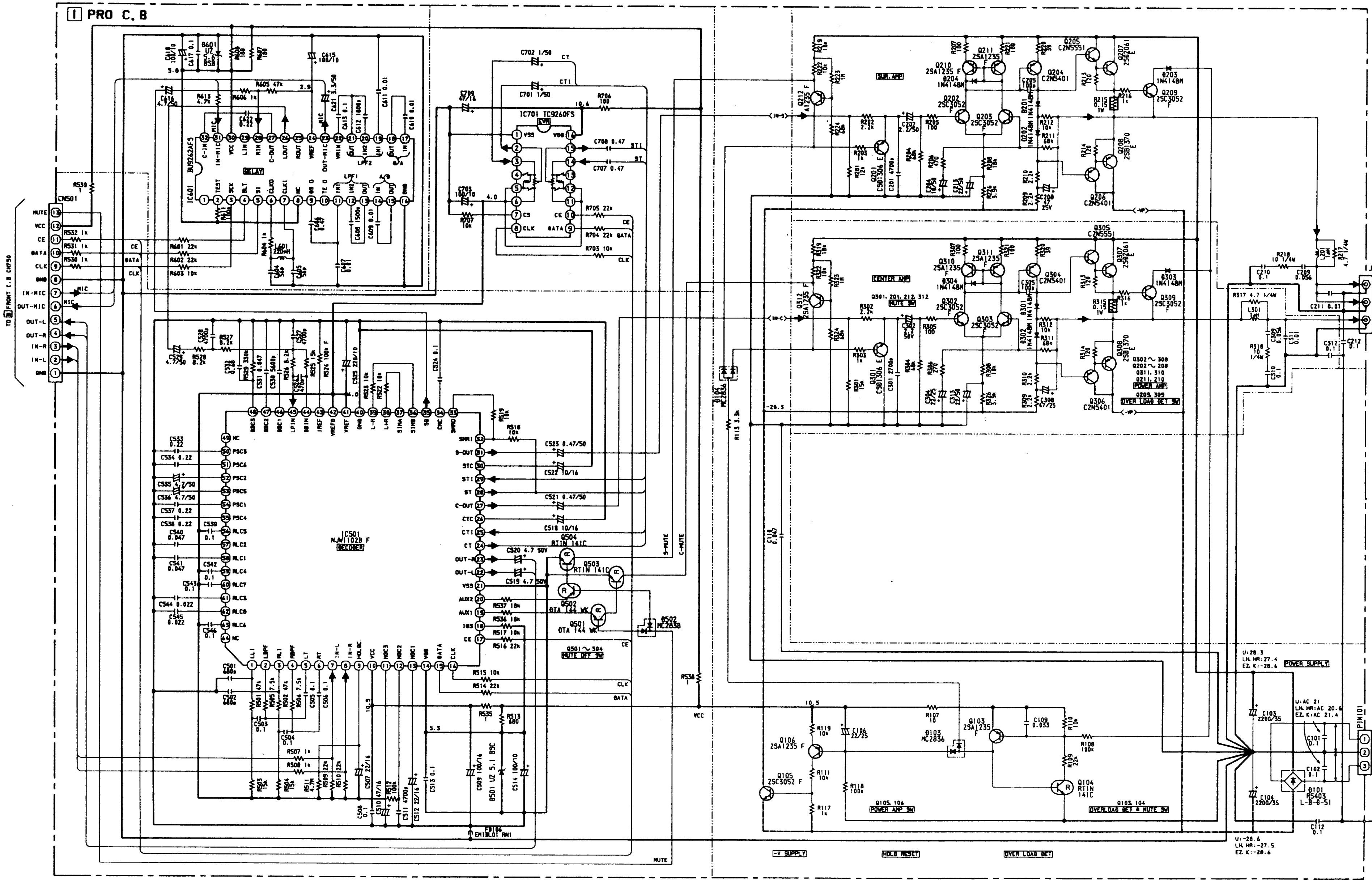
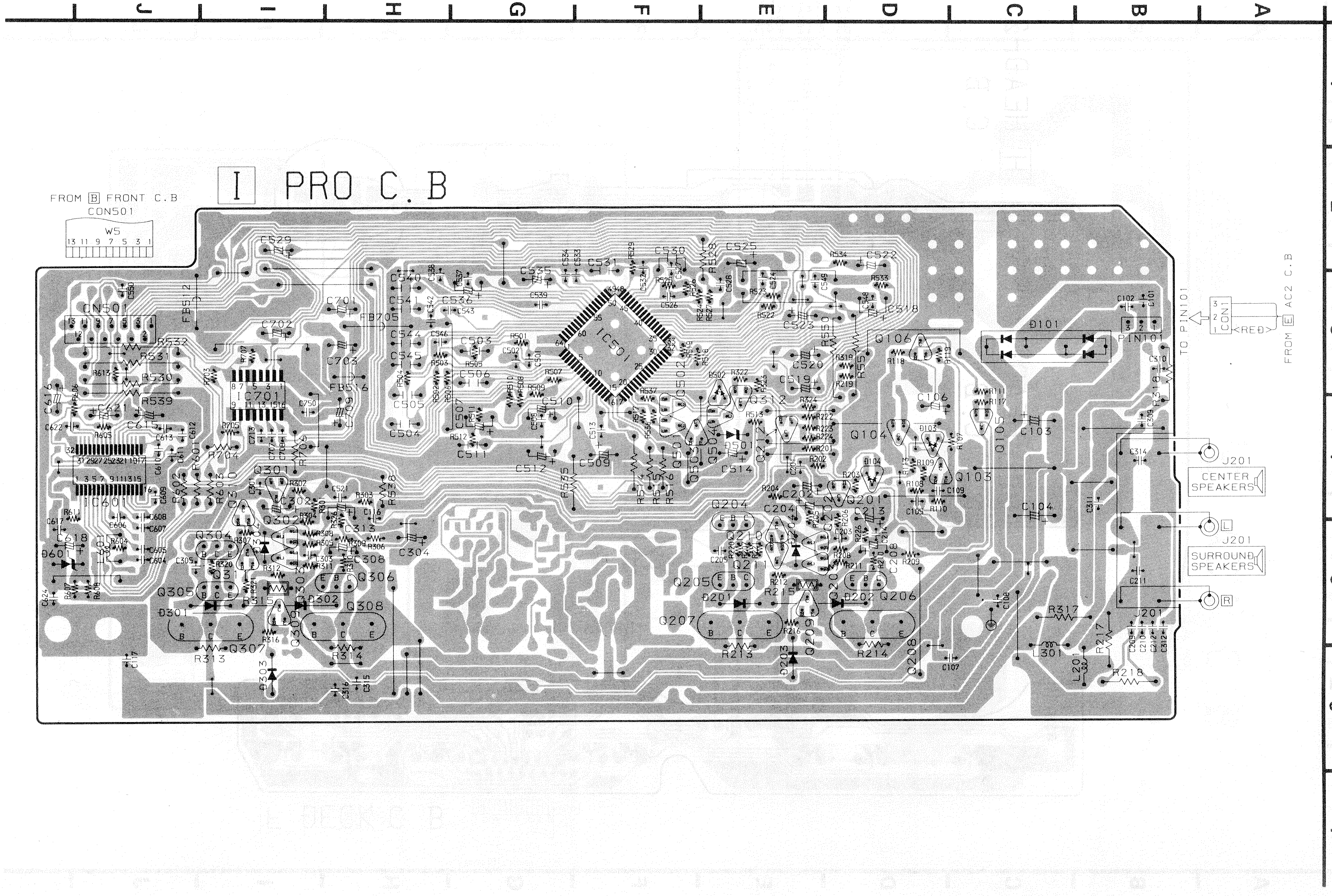
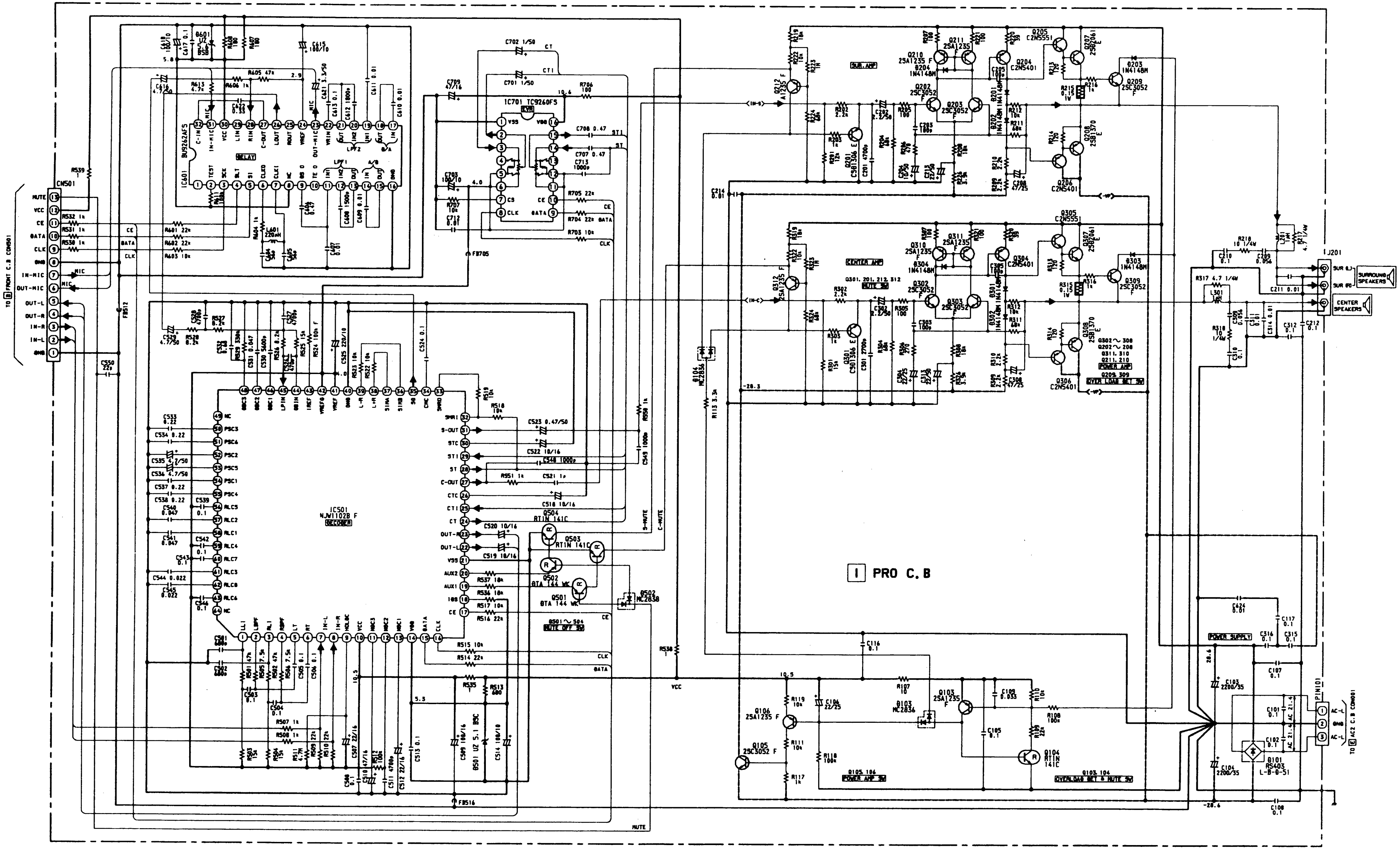
SCHEMATIC DIAGRAM – 5 (PRO : U,LH,HR)



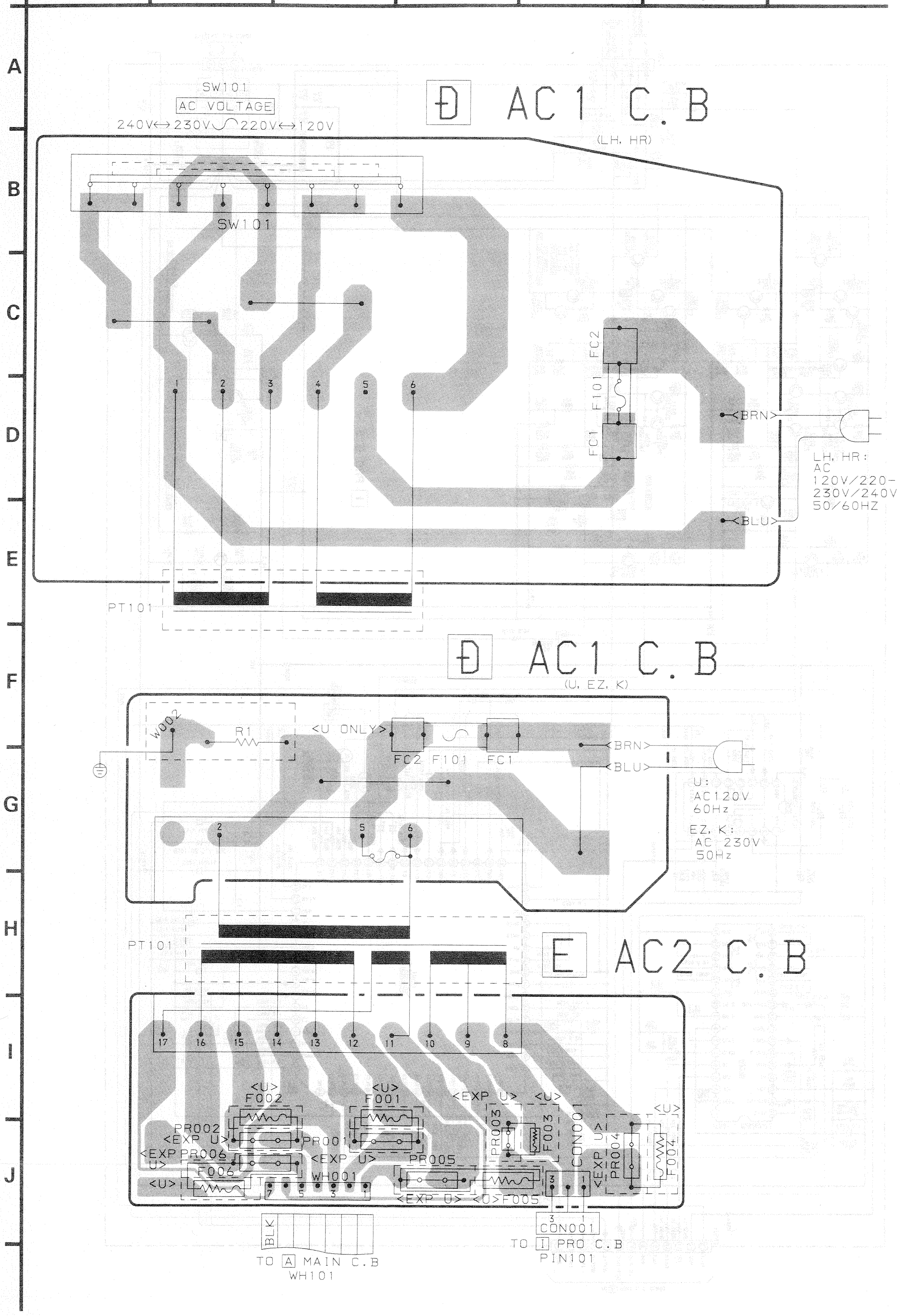
1 PRO C.B
CN501
TO 8 FRONT C.B CN750
MUTE
VCC
CE
DATA
CLK
GND
IN-MIC
OUT-MIC
OUT-L
OUT-R
IN-R
IN-L
IC601 BU9262AF5
DELAY
IC701 TC9260FS
EVR
IC501 NJW1102B F
DECODER
Q501 DTA 144 WK
Q502 DTA 144 WK
Q503 RT1N 141C
Q504 RT1N 141C
Q501 ~ 504 MUTE OFF SW
D502 MC2838
SUR.AMP
CENTER AMP
Q301, 201, 212, 312 MUTE SW
Q302 ~ 308
Q202 ~ 208
Q311, 310
Q211, 210
POWER AMP
Q209, 309
OVER LOAD DET SW
Q210 2SA1235 F
Q211 2SA1235
Q202 2SC3052
Q203 2SC3052
Q204 C2N5401
Q205 C2N5551
Q206 C2N5401
Q207 2SD2061 E
Q208 2SB1370 E
Q209 2SC3052 F
Q212 A1235 F
Q201 C5B1306 E
J201
SURROUND SPEAKERS
CENTER SPEAKERS
POWER SUPPLY
U: 28.3
LH. HR: 27.4
EZ. K: -28.6
U: AC 21
LH. HR: AC 20.6
EZ. K: AC 21.4
U: -28.6
LH. HR: -27.5
EZ. K: -28.6
P1N101
AC-L
GND
TO E AC2 C.B CON001
D101 RS403 L-B-8-51
C103 2200/35
C104 2200/35
Q106 2SA1235 F
Q105 2SC3052 F
Q103 2SA1235 F
Q104 RT1N 141C
D103 MC2836
Q105, 106 POWER AMP SW
Q103, 104 OVERLOAD DET & MUTE SW
-V SUPPLY
HOLD RESET
OVER LOAD DET
MUTE
FB104 EM1BL01 RN1
D501 UZ 5.1 BSC

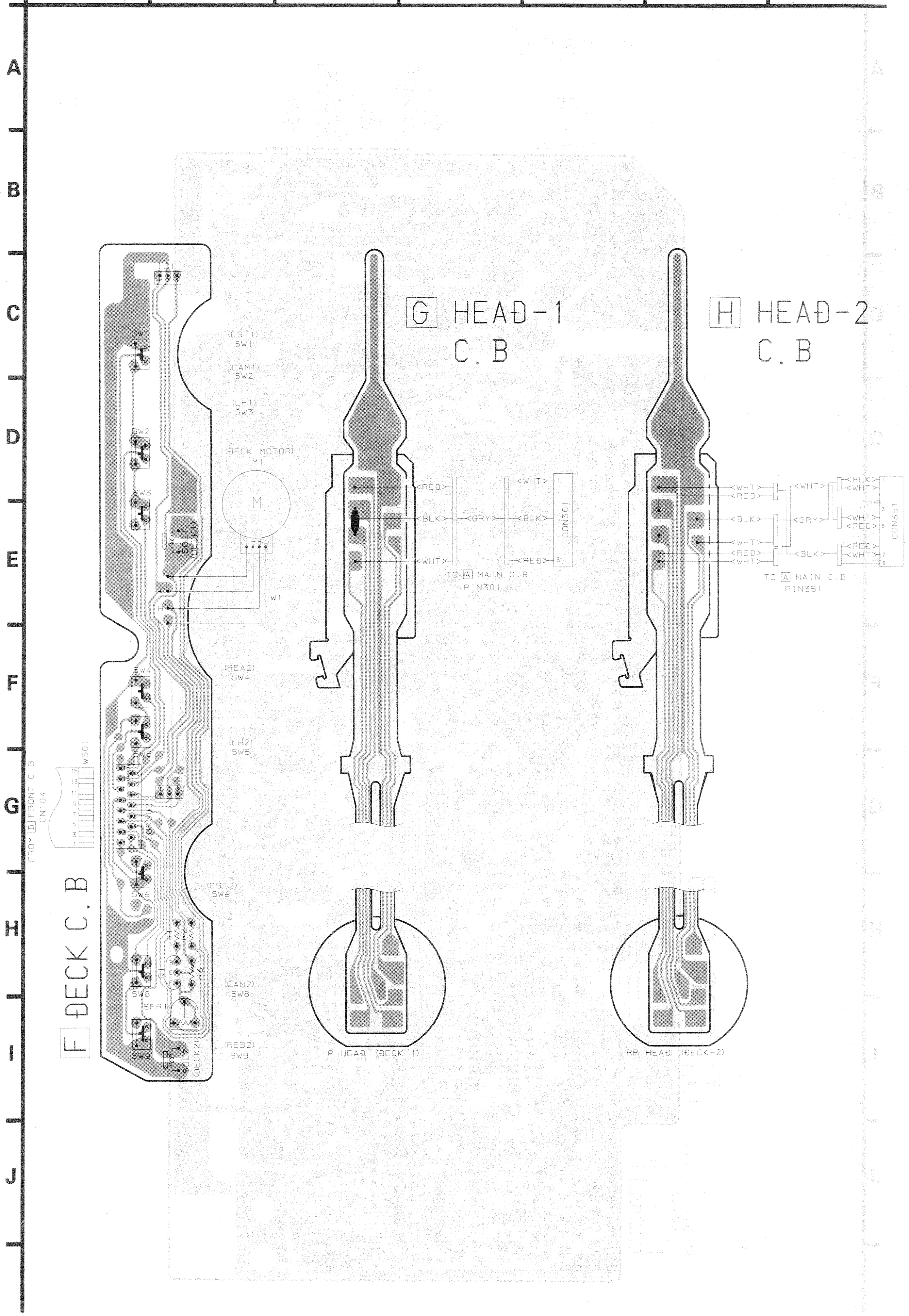

A
B
C
D
E
F
G
H
I
J
1
2
3
4
5
6
7
I PRO C.B
FROM B FRONT C.B
CON501
W5
13 11 9 7 5 3 1
CN501
IC501
IC601
IC701
D101
PIN101
TO PIN101
CON1
<RED>
FROM E AC2 C.B
J201
CENTER SPEAKERS
L
SURROUND SPEAKERS
R
Q101
Q103
Q104
Q105
Q106
Q201
Q204
Q205
Q206
Q207
Q208
Q209
Q210
Q211
Q212
Q301
Q302
Q304
Q305
Q306
Q307
Q308
Q309
Q312
Q501
Q502
D103
D104
D201
D202
D203
D301
D302
D303
D501
D502
D601
FB512
FB516
FB705
L201
L301
R213
R214
R217
R218
R313
R314
R317
R318
C103
C104
C106
C107
C304
C308
C313
C503
C504
C505
C506
C509
C510
C511
C512
C514
C519
C520
C522
C523
C525
C529
C530
C531
C535
C536
C540
C541
C544
C545
C701
C702
C703
C709

SCHEMATIC DIAGRAM – 6 (PRO : EZ,K)

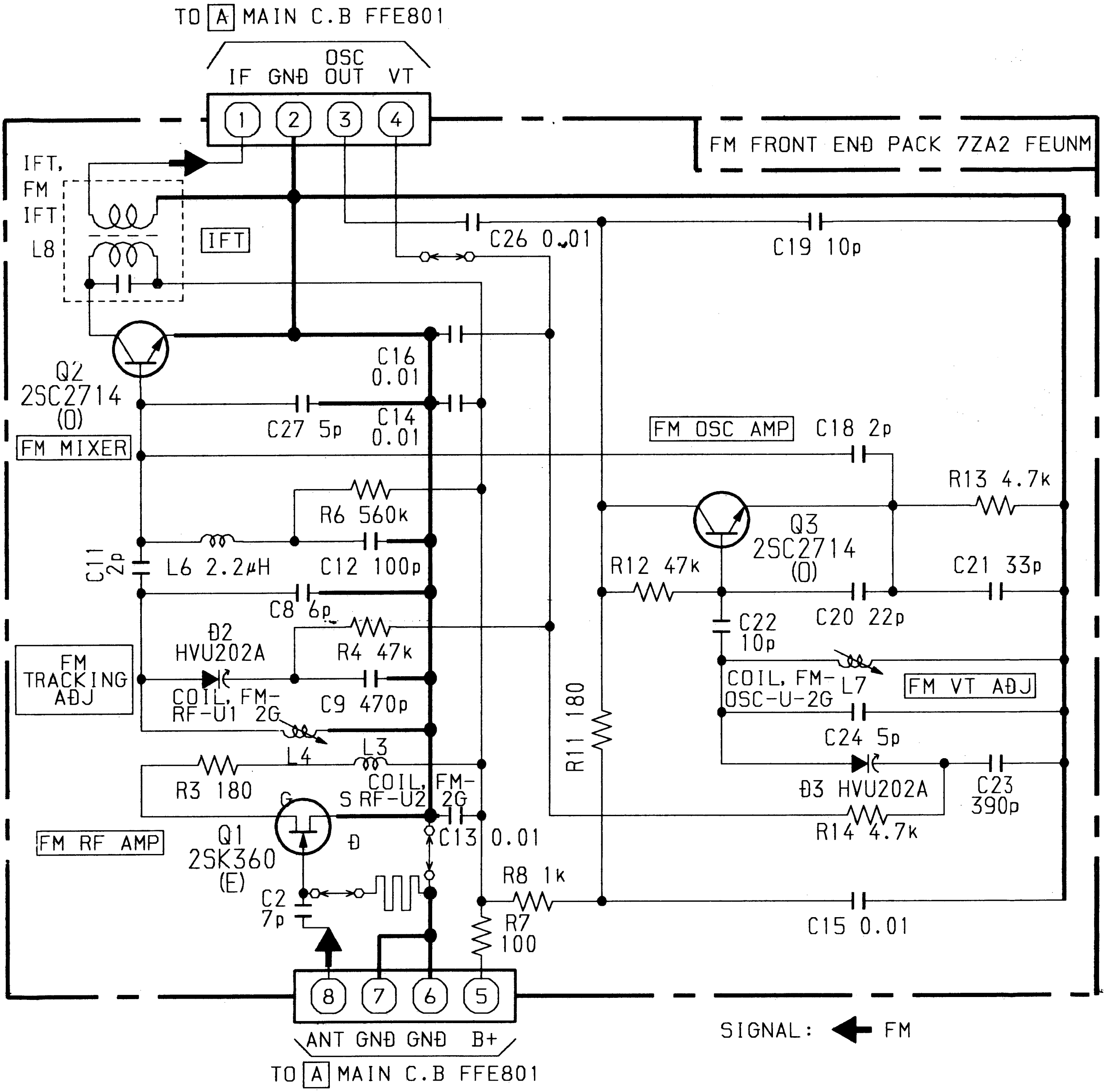


CN501
TO FRONT C.B CN0501
MUTE
VCC
CE
DATA
CLK
GND
IN-MIC
OUT-MIC
OUT-L
OUT-R
IN-R
IN-L
IC601 BU9262AFS
DELAY
IC701 TC9260FS
IC501 NJW1102B F
DECODER
SUR.AMP
CENTER AMP
POWER AMP
OVER LOAD DET SW
MUTE OFF SW
POWER SUPPLY
POWER AMP SW
OVERLOAD DET & MUTE SW
I PRO C.B
J201
SURROUND SPEAKERS
CENTER SPEAKERS
TO AC2 C.B CN0001
AC-L
GND
D101 RS403 L-B-B-51
Q501 DTA 144 WK
Q502 DTA 144 WK
Q503 RTIN 141C
Q504 RTIN 141C
Q103 2SA1235 F
Q104 RTIN 141C
Q105 2SC3052 F
Q106 2SA1235 F
D103 MC2836
D104 MC2836
D502 MC2838
D501 UZ 5.1 BSC
D601 UZ 5.6 BSB


SW101
AC VOLTAGE
240V↔230V∽220V↔120V
Đ AC1 C.B
(LH, HR)
SW101
1
2
3
4
5
6
FC2
F101
FC1
<BRN>
<BLU>
LH, HR:
AC
120V/220-
230V/240V
50/60HZ
PT101
Đ AC1 C.B
(U, EZ, K)
W002
R1
<U ONLY>
FC2
F101
FC1
<BRN>
<BLU>
U:
AC120V
60Hz
EZ, K:
AC 230V
50Hz
PT101
E AC2 C.B
17
16
15
14
13
12
11
10
9
8
<U>
F002
<U>
F001
<EXP U>
<U>
PR002
<EXP U>
PR001
<EXP PR006
U>
F006
<U>
<EXP U>
WH001
PR005
PR003
F003
CON001
<EXP U>
PR004
F004
<U>
<EXP U>
<U>F005
BLK
TO A MAIN C.B
WH101
CON001
TO I PRO C.B
PIN101

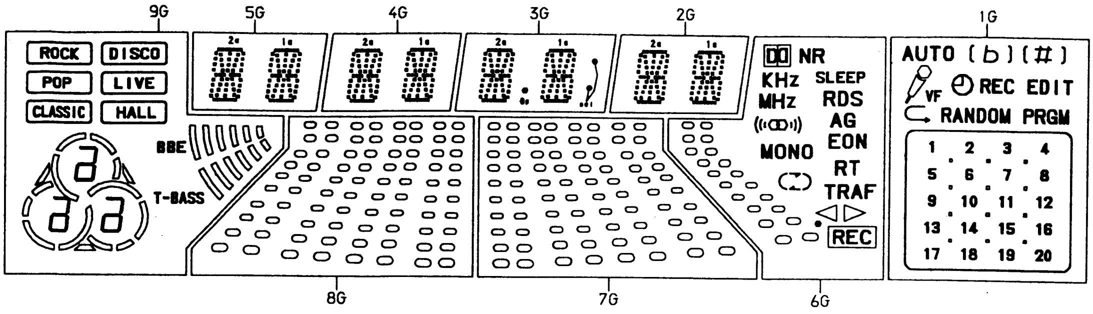

G HEAD-1 C.B
H HEAD-2 C.B
F DECK C.B
(CST1) SW1
(CAM1) SW2
(LH1) SW3
(DECK MOTOR) M1
W1
(REA2) SW4
(LH2) SW5
(CST2) SW6
(CAM2) SW8
(REB2) SW9
SFR1
FROM B FRONT C.B CN104
W501
<RED>
<BLK>
<WHT>
<GRY>
CON301
TO A MAIN C.B
PIN301
CON351
TO A MAIN C.B
PIN351
P HEAD (DECK-1)
RP HEAD (DECK-2)

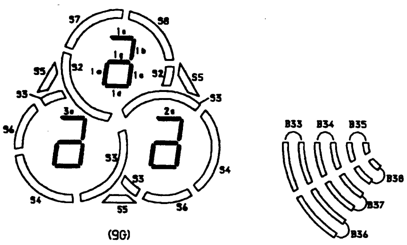
SCHEMATIC DIAGRAM – 7 (TUNER FRONT END : U,LH,HR)


TO A MAIN C.B FFE801
IF
GND
OSC OUT
VT
1
2
3
4
FM FRONT END PACK 7ZA2 FEUNM
IFT, FM IFT L8
IFT
C26 0.01
C19 10p
Q2 2SC2714 (O)
FM MIXER
C16 0.01
C27 5p
C14 0.01
FM OSC AMP
C18 2p
R13 4.7k
R6 560k
Q3 2SC2714 (O)
C11 2p
L6 2.2μH
C12 100p
R12 47k
C21 33p
C8 6p
C22 10p
C20 22p
D2 HVU202A
R4 47k
FM TRACKING ADJ
COIL, FM-RF-U1 2G
C9 470p
COIL, FM-OSC-U-2G
L7
FM VT ADJ
R11 180
C24 5p
L4
L3
R3 180
COIL, FM-RF-U2 2G
D3 HVU202A
C23 390p
G
S
Q1 2SK360 (E)
D
C13 0.01
R14 4.7k
FM RF AMP
R8 1k
C2 7p
R7 100
C15 0.01
8
7
6
5
ANT
GND
GND
B+
TO A MAIN C.B FFE801
SIGNAL: ← FM

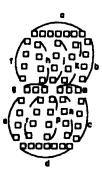
FL GRID ASSIGNMENT & ANODE CONNECTION

GRID ASSIGNMENT

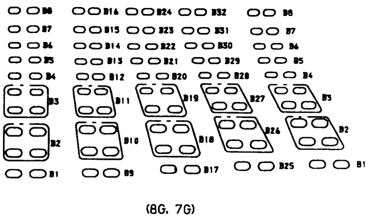

9G
5G
4G
3G
2G
1G
ROCK
DISCO
POP
LIVE
CLASSIC
HALL
BBE
T-BASS
NR
KHz
SLEEP
MHz
RDS
AG
MONO
EON
RT
TRAF
REC
AUTO
VF
REC
EDIT
RANDOM
PRGM
1 2 3 4
5 6 7 8
9 10 11 12
13 14 15 16
17 18 19 20
8G
7G
6G


S7
S8
S5
S2
S3
S4
S6
S1
B33
B34
B35
B36
B37
B38

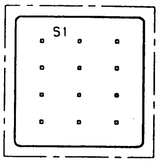
(9G)



(5G ~ 2G)


B1
B2
B3
B4
B5
B6
B7
B8
B9
B10
B11
B12
B13
B14
B15
B16
B17
B18
B19
B20
B21
B22
B23
B24
B25
B26
B27
B28
B29
B30
B31
B32

(8G, 7G)



(1G)

BJ531GK
GRID ASSIGNMENT

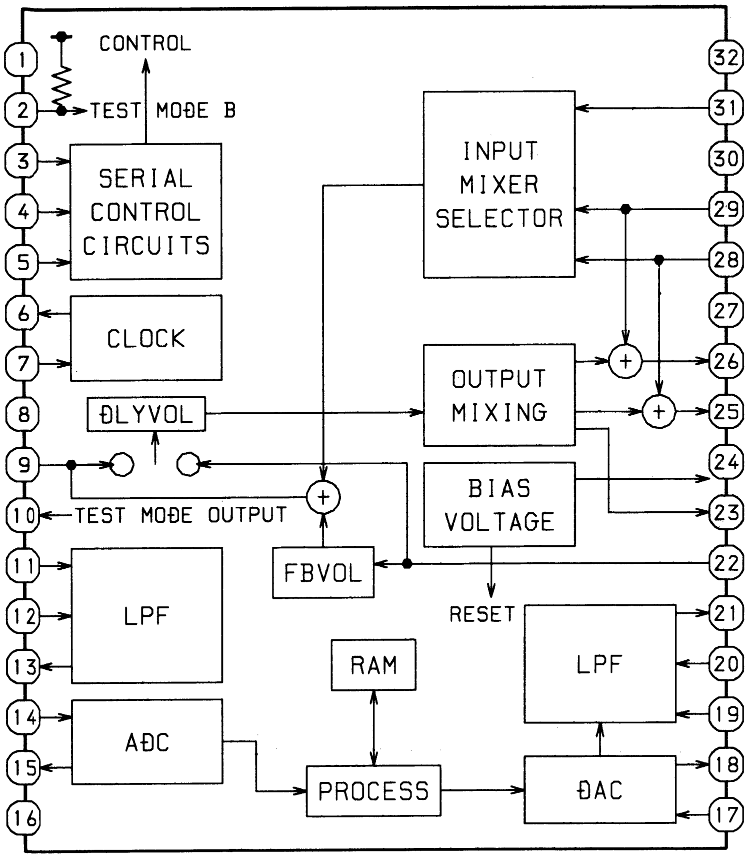
ANODE CONNECTION

	9G	8G, 7G	6G	5G, 4G	3G	2G	1G
P1	S8	B32	▷	-	col(F)	-	**RANDOM**
P2	S2	B24	◁	1d	1d	1d	-
P3	1b	B16	**SLEEP**	1n	1n	1n	**PRGM**
P4	1c	B8	B8	1p	1p	1p	**EDIT**
P5	1e	B31	○	1r	1r	1r	**1**
P6	1a, 1d, 1g	B23	**REC**	1e	1e	1e	**2**
P7	2b	B15	**KHz**	1c	1c	1c	**3**
P8	2c	B7	B7	1g	1g	1g	**4**
P9	2e	B30	**MHz**	1m	1m	1m	**5**
P10	2a, 2d, 2g	B22	-	1f	1f	1f	**6**
P11	3b	B14	**DD NR**	1b	1b	1b	**7**
P12	3c	B6	B6	1k	1k	1k	**8**
P13	3e	B29	**RDS**	1j	1j	1j	**9**
P14	3a, 3d, 3g	B21	-	1h	1h	1h	**10**
P15	S3	B13	-	1a	1a	1a	**11**
P16	S5	B5	B5	-	col(L)	-	**12**
P17	S7	B28	-	-	Ðp	-	**13**
P18	S4	B20	-	2d	2d	2d	**14**
P19	S6	B12	-	2n	2n	2n	**15**
P20	(HALL)	B4	B4	2p	2p	2p	**16**
P21	(LIVE)	B27	**AG**	2r	2r	2r	**17**
P22	(ÐISCO)	B19	((ıꝏı))	2e	2e	2e	**18**
P23	(CLASSIC)	B11	**EON**	2c	2c	2c	**19**
P24	(POP)	B3	B3	2g	2g	2g	**20**
P25	(ROCK)	B26	**RT**	2m	2m	2m	**AUTO**
P26	B36	B18	**MONO**	2f	2f	2f	🎤 **VF**
P27	B37	B10	**TRAF**	2b	2b	2b	🕘
P28	B38	B2	B2	2k	2k	2k	**REC**
P29	B33	B25	)	2j	2j	2j	↪
P30	B34	B17	⇄	2h	2h	2h	[(#)]
P31	B35	B9	(	2a	2a	2a	[(b)]
P32	S9 **T-BASS**	B1	B1	-	-	-	S1
P33	S10	-	-	-	-	-	-
P34	**BBE**	-	-	-	-	-	-
P35	-	-	-	-	-	-	b #

BJ531GK
ANOÐE CONNECTION

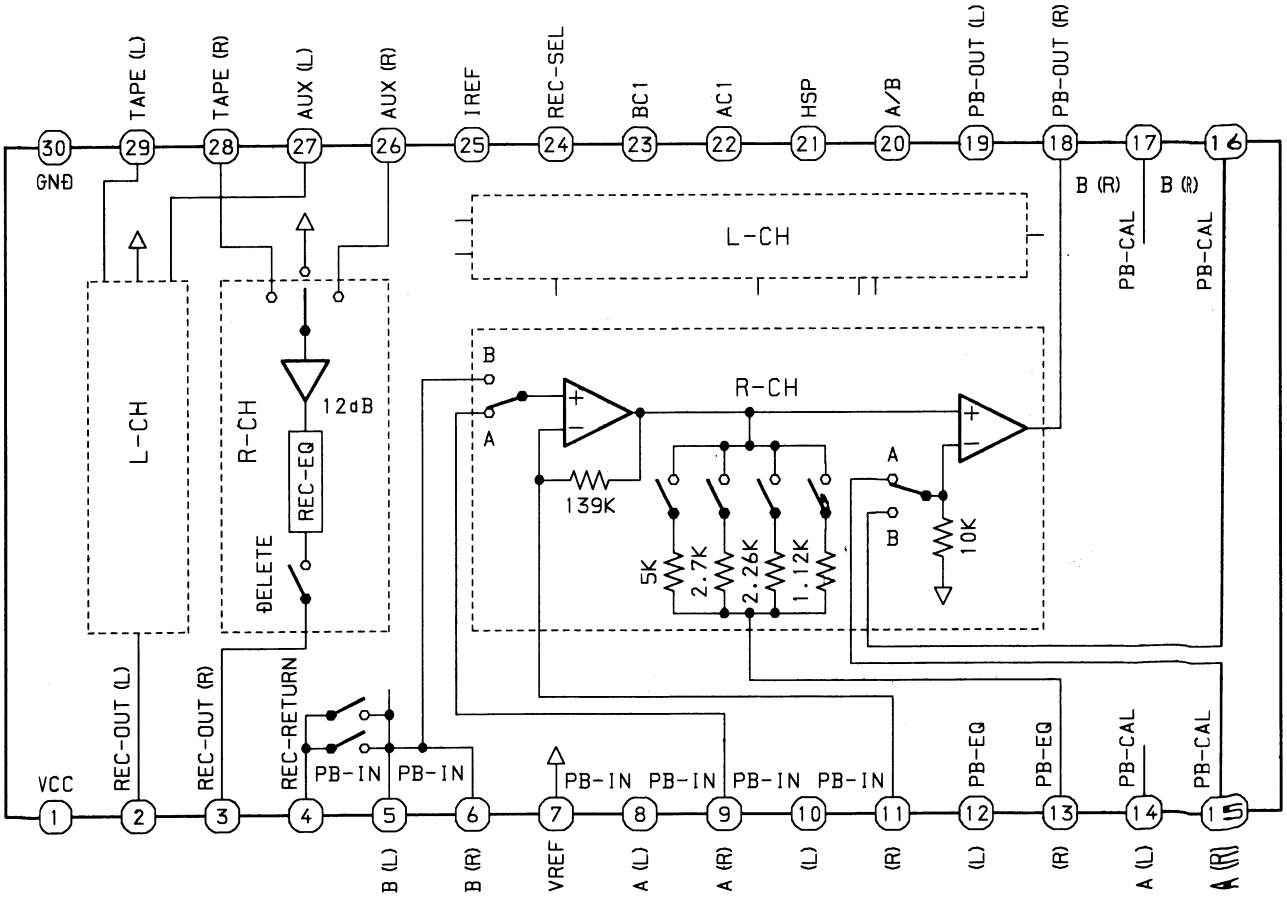
IC BLOCK DIAGRAM

IC, BU9262AFS



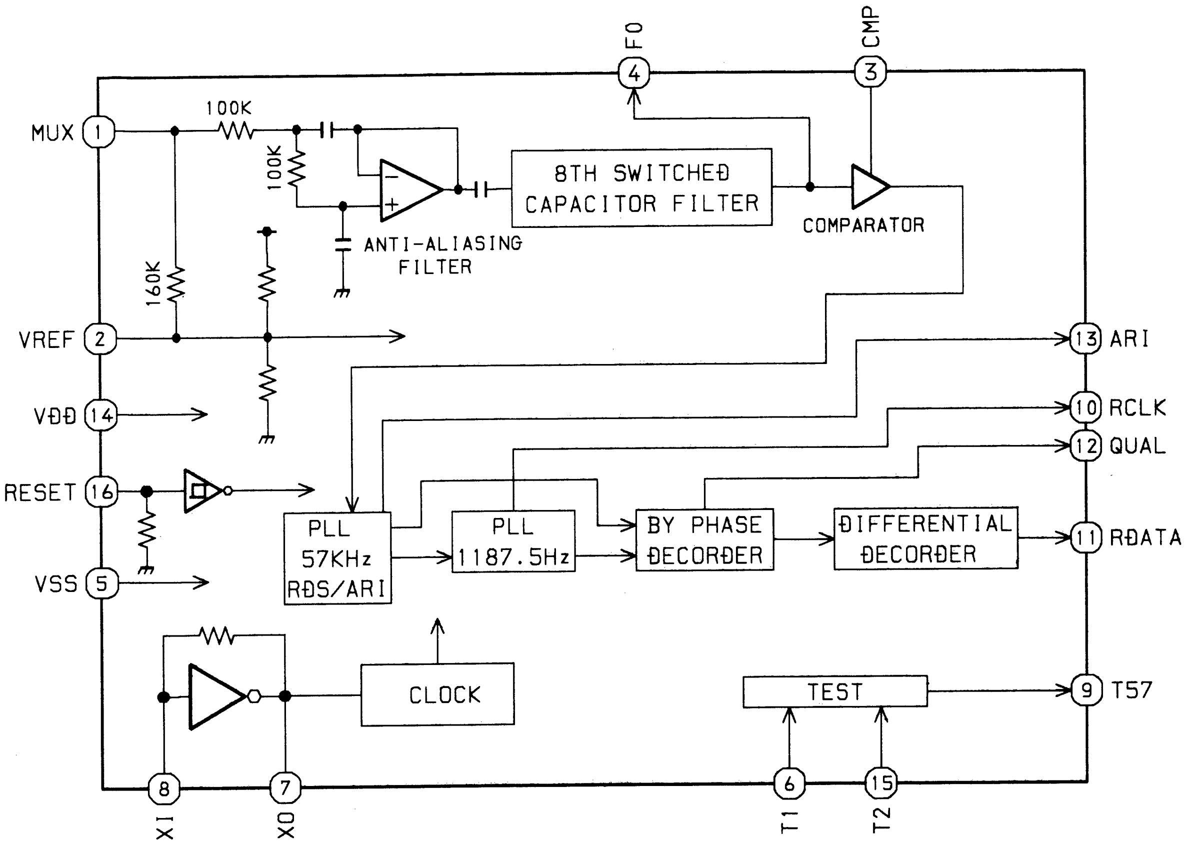
CONTROL
TEST MODE B
SERIAL CONTROL CIRCUITS
CLOCK
DLYVOL
TEST MODE OUTPUT
FBVOL
LPF
ADC
RAM
PROCESS
INPUT MIXER SELECTOR
OUTPUT MIXING
BIAS VOLTAGE
RESET
LPF
DAC
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
29
30
31
32

IC, HA12211NT

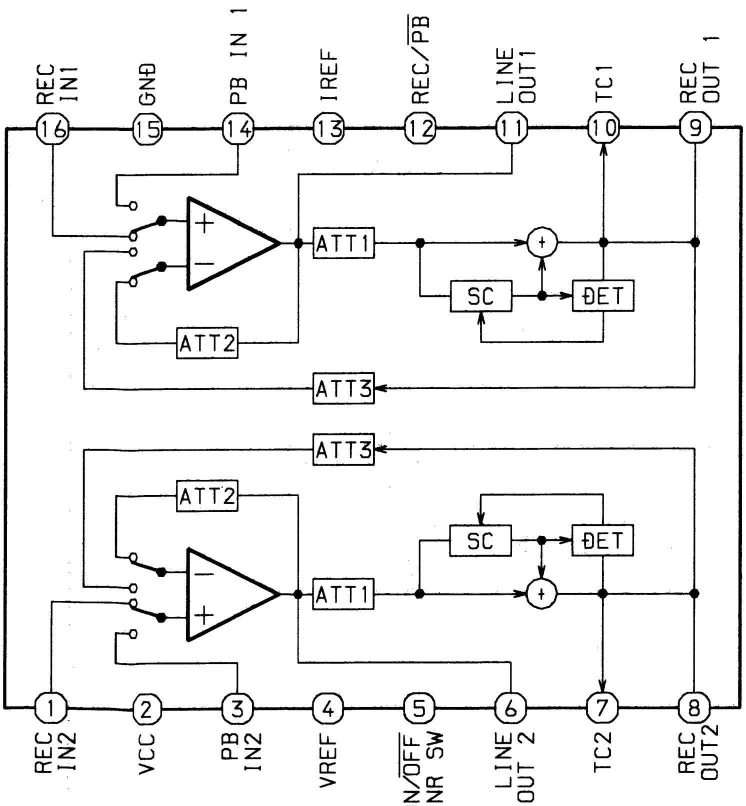


TAPE (L)
TAPE (R)
AUX (L)
AUX (R)
IREF
REC-SEL
BC1
AC1
HSP
A/B
PB-OUT (L)
PB-OUT (R)
30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
GND
B (R)
B (R)
PB-CAL
PB-CAL
L-CH
L-CH
R-CH
12dB
REC-EQ
DELETE
B
A
R-CH
139K
5K
2.7K
2.26K
1.12K
A
B
10K
VCC
REC-OUT (L)
REC-OUT (R)
REC-RETURN
PB-IN
PB-IN
PB-IN
PB-IN
PB-IN
PB-IN
PB-EQ
PB-EQ
PB-CAL
PB-CAL
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
B (L)
B (R)
VREF
A (L)
A (R)
(L)
(R)
(L)
(R)
A (L)
A (R)

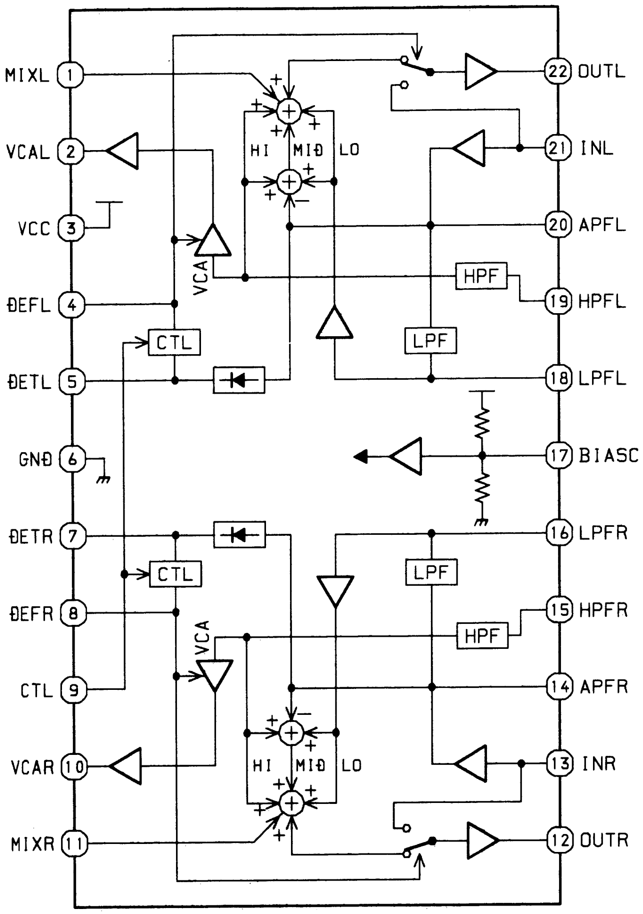
IC, BU1920S


F0
CMP
4
3
MUX 1
100K
100K
8TH SWITCHED CAPACITOR FILTER
COMPARATOR
ANTI-ALIASING FILTER
160K
VREF 2
13 ARI
VDD 14
10 RCLK
12 QUAL
RESET 16
PLL 57KHz RDS/ARI
PLL 1187.5Hz
BY PHASE DECORDER
DIFFERENTIAL DECORDER
11 RDATA
VSS 5
CLOCK
TEST
9 T57
8
7
6
15
XI
XO
T1
T2

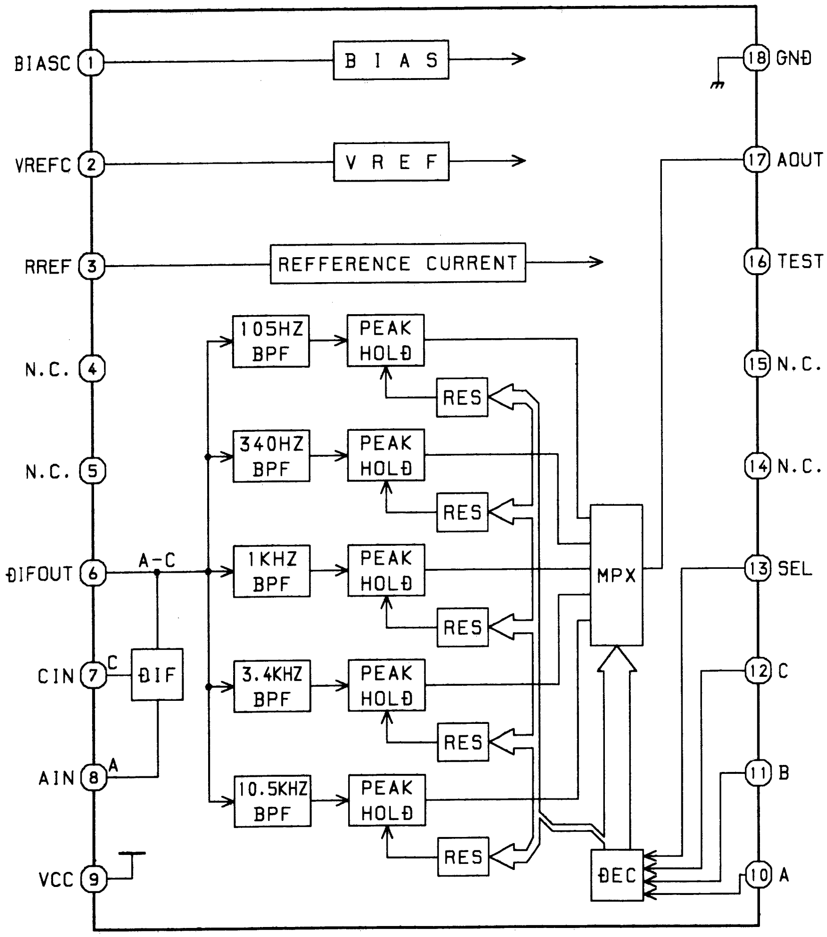
IC, CXA1553P


REC IN1
GND
PB IN 1
IREF
REC/PB
LINE OUT1
TC1
REC OUT 1
16
15
14
13
12
11
10
9
ATT1
SC
DET
ATT2
ATT3
ATT3
ATT2
SC
DET
ATT1
1
2
3
4
5
6
7
8
REC IN2
VCC
PB IN2
VREF
ON/OFF NR SW
LINE OUT 2
TC2
REC OUT2

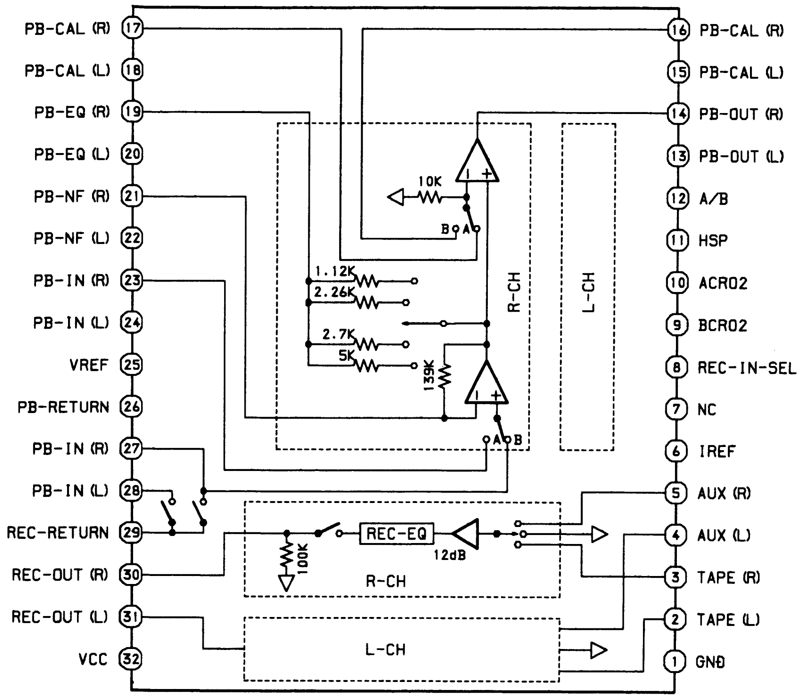
IC, BA3880S


MIXL 1
VCAL 2
VCC 3
ĐEFL 4
ĐETL 5
GNĐ 6
ĐETR 7
ĐEFR 8
CTL 9
VCAR 10
MIXR 11
12 OUTR
13 INR
14 APFR
15 HPFR
16 LPFR
17 BIASC
18 LPFL
19 HPFL
20 APFL
21 INL
22 OUTL
HI
MIĐ
LO
VCA
HPF
LPF
CTL
+
−

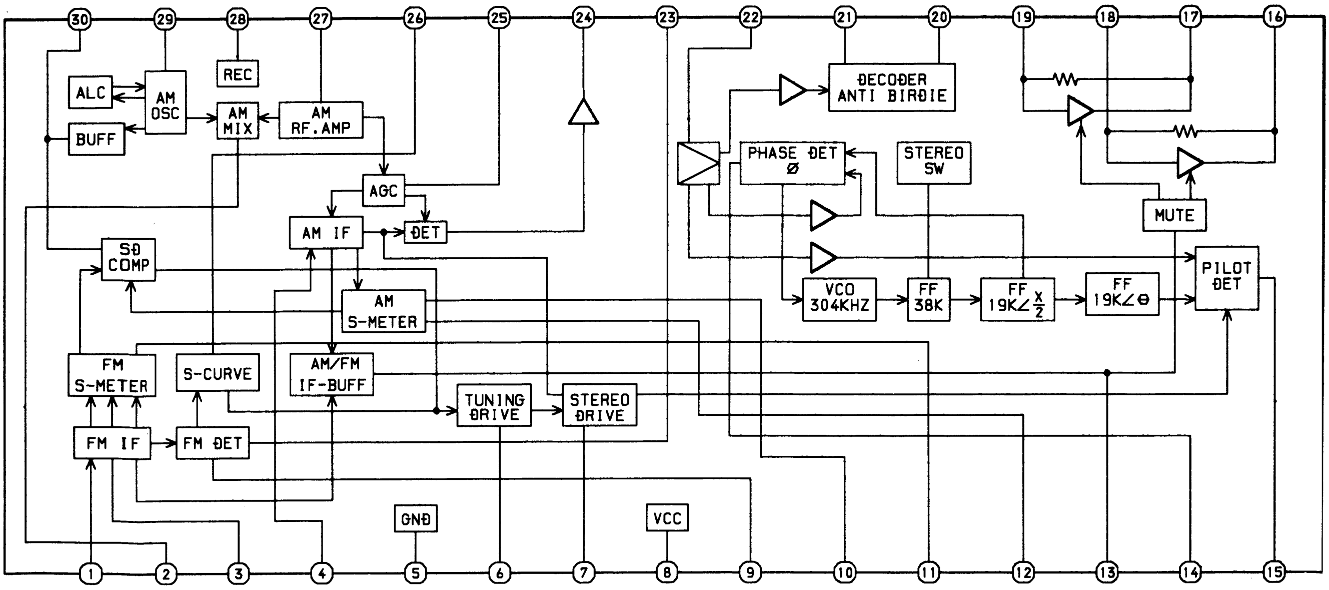
IC, BA3835S


BIASC 1
VREFC 2
RREF 3
N.C. 4
N.C. 5
ĐIFOUT 6
CIN 7
AIN 8
VCC 9
10 A
11 B
12 C
13 SEL
14 N.C.
15 N.C.
16 TEST
17 AOUT
18 GNĐ
B I A S
V R E F
REFFERENCE CURRENT
A−C
C
A
ĐIF
105HZ BPF
340HZ BPF
1KHZ BPF
3.4KHZ BPF
10.5KHZ BPF
PEAK HOLĐ
RES
MPX
ĐEC

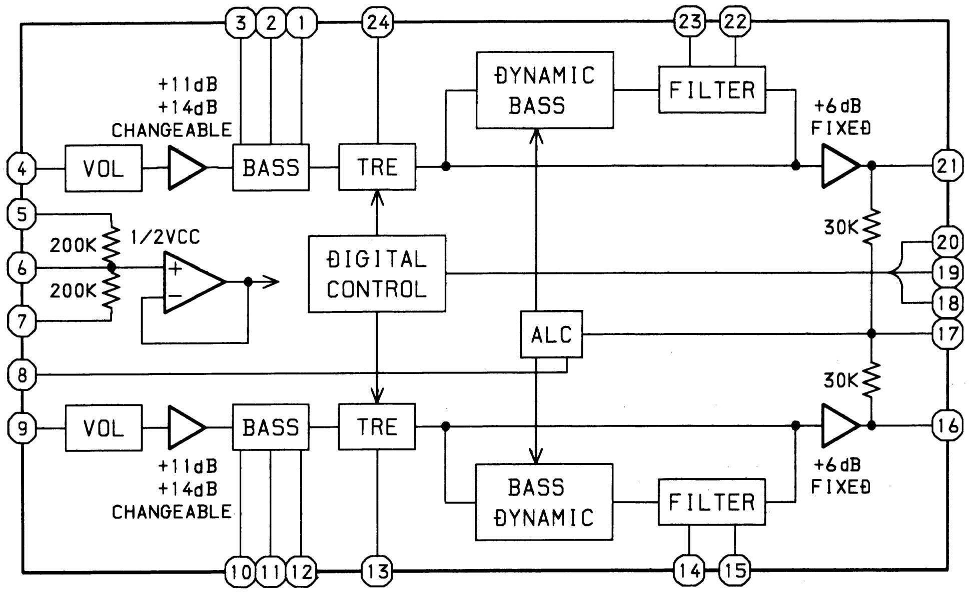
IC, BA7762FS


PB-CAL (R) 17
PB-CAL (L) 18
PB-EQ (R) 19
PB-EQ (L) 20
PB-NF (R) 21
PB-NF (L) 22
PB-IN (R) 23
PB-IN (L) 24
VREF 25
PB-RETURN 26
PB-IN (R) 27
PB-IN (L) 28
REC-RETURN 29
REC-OUT (R) 30
REC-OUT (L) 31
VCC 32
16 PB-CAL (R)
15 PB-CAL (L)
14 PB-OUT (R)
13 PB-OUT (L)
12 A/B
11 HSP
10 ACRO2
9 BCRO2
8 REC-IN-SEL
7 NC
6 IREF
5 AUX (R)
4 AUX (L)
3 TAPE (R)
2 TAPE (L)
1 GND
10K
B A
1.12K
2.26K
2.7K
5K
139K
R-CH
L-CH
A B
REC-EQ
12dB
100K
R-CH
L-CH

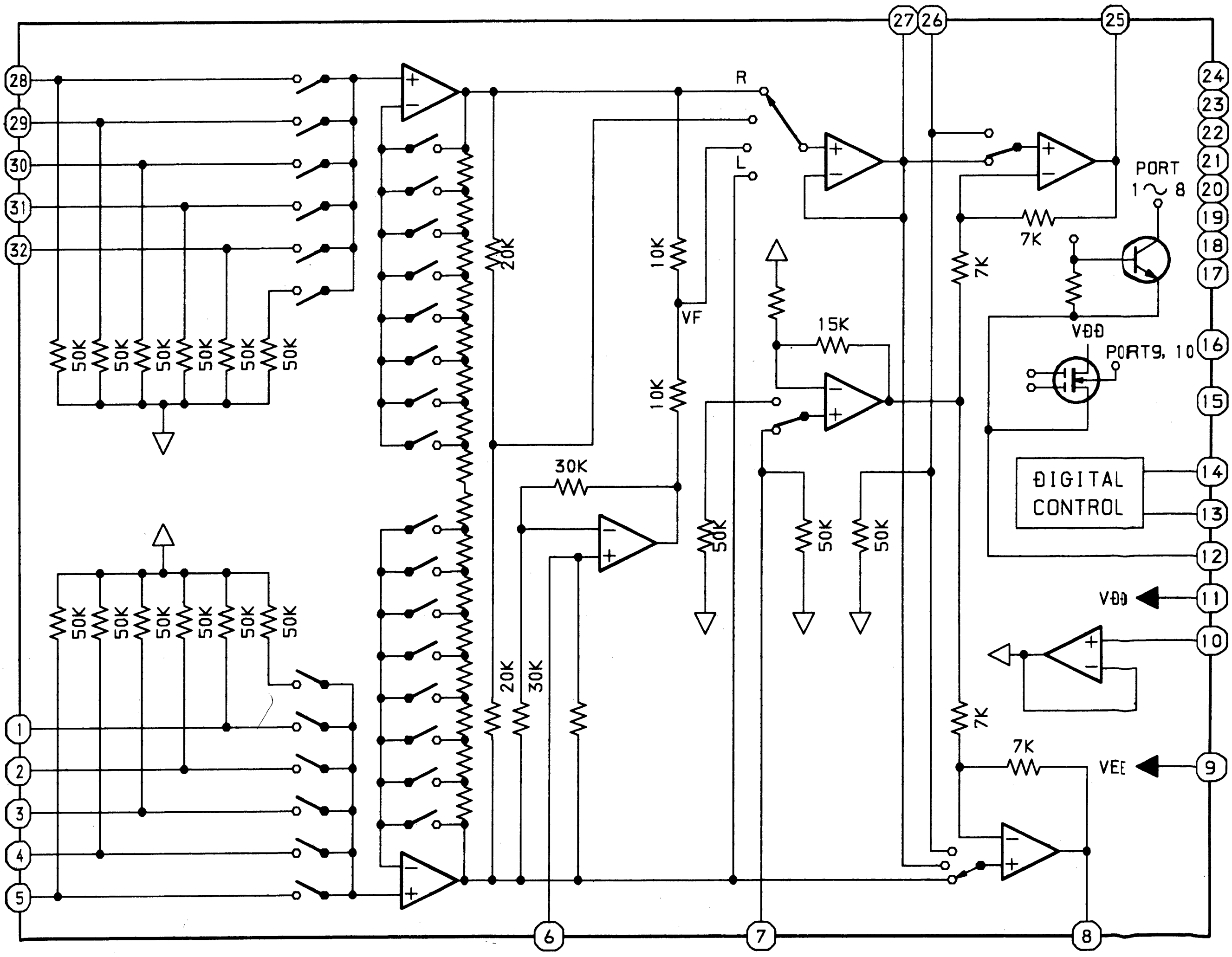
IC, LA1837


30
29
28
27
26
25
24
23
22
21
20
19
18
17
16
ALC
AM OSC
BUFF
REC
AM MIX
AM RF.AMP
AGC
AM IF
DET
SD COMP
AM S-METER
FM S-METER
S-CURVE
AM/FM IF-BUFF
TUNING DRIVE
STEREO DRIVE
FM IF
FM DET
GND
VCC
DECODER ANTI BIRDIE
PHASE DET Ø
STEREO SW
VCO 304KHZ
FF 38K
FF 19K∠$\frac{x}{2}$
FF 19K∠θ
PILOT DET
MUTE
1
2
3
4
5
6
7
8
9
10
11
12
13
14
15

IC, BH3864F


DYNAMIC BASS
FILTER
+11dB
+14dB
CHANGEABLE
+6dB FIXED
VOL
BASS
TRE
30K
200K
1/2VCC
200K
DIGITAL CONTROL
ALC
30K
VOL
BASS
TRE
+6dB FIXED
+11dB
+14dB
CHANGEABLE
BASS DYNAMIC
FILTER
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24

IC, BH3810FS


R
L
VF
PORT
1 ~ 8
PORT9, 10
VDD
DIGITAL CONTROL
VDD
VEE
50K
20K
10K
10K
30K
15K
7K
7K
7K
7K
20K
30K
1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32

IC DESCRIPTION

IC, LC866548V-5E54

Pin No.	Pin Name	I/O	Description
1	RT-A	I	Rotary encoder A input.
2	RT-B	I	Rotary encoder B input.
3	$\overline{\text{LED-MD}}$	O	"MD" LED $\overline{\text{ON}}$/OFF output.
4	$\overline{\text{LED-CD}}$	O	"CD " LED $\overline{\text{ON}}$/OFF output.
5	$\overline{\text{LED-AUX}}$	O	"AUX" LED $\overline{\text{ON}}$/OFF output.
6	$\overline{\text{LED-TUNER}}$	O	"TUNER" LED $\overline{\text{ON}}$/OFF output.
7	$\overline{\text{LED-TAPE}}$	O	"TAPE" LED $\overline{\text{ON}}$/OFF output.
8	HSP	O	Tape deck motor high speed ON/$\overline{\text{OFF}}$ output.
9	$\overline{\text{O-POWER}}$	O	System power supply $\overline{\text{ON}}$/OFF output.
10	O-MUTE	O	System mute ON/$\overline{\text{OFF}}$ output.
11	$\overline{\text{O-CLK-SHIFT}}$	O	U-COM clock shift output.
12	$\overline{\text{RESET}}$	I	Reset input.
13	$\overline{\text{I-HP-MUTE}}$	–	Not connected.
14	I-DISH	I	CD turntable photo sensor A/D converter input.
15	VSS 1	–	GND.
16	CF 1	–	5.76MHz oscillator circuit.
17	CF 2	–	
18	VDD 1	–	Power supply input.
19	$\overline{\text{HOLD}}$	I	Power failure detected input "1" to stop clock and main memory.
20	KEY-1	I	KEY input.(A/D)
21	KEY-2	I	
22	KEY-3	I	
23	I-CD SW	I	CD mechanical switch A/D converter input.
24	I-MIC	I	Microphone input for AUTO VF display.
25	I-TU-SIG/$\overline{\text{MS}}$	I	Tuner signal and deck music sensor signal input.
26	I-SPEANA	I	A/D input for spectrum analyzer display.
27	I-WRQ/RDS-CLK	I	CD WRQ input . TUNER RDS CLOCK input.
28	I-TM-BASE	I	REFERENCE CLOCK input for timer watch.
29	I-$\overline{\text{RMC}}$	I	System remote control signal input.
30~37	G9~G2	O	FL GRID output G2~G9.
38~43	P32~P27	O	FL SEGMENT output P27~P32.
44	G1	O	FL grid output G1.
45	P26	–	FL SEGMENT output P26.
46	VDD3	–	Power supply input.
47	SPEANA-A/P25	O	Spectrum analyzer band switching output /FL segment P25 output.
48	SPEANA-B/P24	O	Spectrum analyzer band switching output /FL segment P24 output.
49	SPEANA-C/P23	O	Spectrum analyzer band switching output /FL segment P23 output.
50	P22/H-DUBB INH	I /O	FL segment P22 output / high dubbing inhibit input to diode.
51	VP	–	Power supply input for FL display.
52	P21/AM-ST	I /O	FL segment P21 output / AM stereo input to diode.
53	P20/LW	I/O	FL segment P20 output / LW mode data input to diode.
54	P19/SW	I/O	FL segment P19 output / SW mode data input to diode.

Pin No.	Pin Name	I/O	Description
55	P18/FM 1	I/O	FL segment P18 output / FM1 (OIRT) data input to diode.
56	P17/RDS	I/O	FL segment P17 output / RDS data input to diode.
57	P16/$\overline{\text{BBE}}$	I/O	FL segment P16 output / BBE data input to diode.
58	P15/$\overline{\text{DSP}}$	I/O	FL segment P15 output / DSP data input to diode.
59	P14/D-SURR	I/O	FL segment P14 output / DOLBY-SURR data input to diode.
60	P13/K-CON	I/O	FL segment P13 output / K-CON data input to diode.
61	P12/$\overline{\text{DOLBY}}$	I/O	FL segment P12 output / DOLBY data input to diode.
62	P11/WAY	I/O	FL segment P11 output / DECK/WAY MECHA data input to diode.
63	P10/AM-9K/10K	I/O	FL segment P10 output / INITIAL AM 10 kHz step data input to diode.
64	P9/$\overline{\text{CST 2}}$	I/O	FL segment P9 output / DECK2 cassette detect switch data input.
65	P8/$\overline{\text{REB}}$	I/O	FL segment P8 output / DECK2 side-B record OK switch data input.
66	P7/$\overline{\text{CAM 2}}$	I/O	FL segment P7 output / DECK2 CAM switch data input.
67	P6/AUTO 1	I/O	FL segment P6 output / DECK1 AUTO stop signal input.
68	P5/AUTO 2	I/O	FL segment P5 output / DECK2 AUTO stop signal input.
69	P4/$\overline{\text{CAM 1}}$	I/O	FL segment P4 output / DECK1 CAM switch data input.
70	P3/$\overline{\text{CST 1}}$	I/O	FL segment P3 output / DECK1 cassette detect switch data input.
71	P2/$\overline{\text{REA}}$	I/O	FL segment P2 output / DECK2 side A record OK switch data input.
72	VDD 4	–	Power supply input.
73	P1/2092	I/O	FL segment P1 output / SHIFT resistor IC 2092 data input to diode.
74	K-SCAN	O	Switch SCAN timing output.
75	LED/LCK	O	Latch clock output for front shift resistor.
76	PRO-CE	O	PRO LOGIC IC chip enable output.(Not used.)
77	PLL-CE	O	PLL IC chip enable output.
78	MA-STB	O	Latch strobe output for Main C.B.
79	DATA	O	DATA output for Main, Front C.B.
80	CLK	O	CLOCK output for Main,Front C.B.
81	DISH-RVS	O	CD turntable reverse rotation output.
82	DISH-FWD	O	CD turntable forward rotation output.
83	TRAY-OPEN	O	CD TRAY OPEN data output.
84	TRAY-CLOSE	O	CD TRAY CLOSE data output.
85	$\overline{\text{LED}}$ ▶▶	O	▶▶ LED $\overline{\text{ON}}$/OFF output.
86	$\overline{\text{LED}}$ ◀◀	O	◀◀ LED $\overline{\text{ON}}$/OFF output.
87	$\overline{\text{LED}}$ ▶	O	▶ LED $\overline{\text{ON}}$/OFF output.
88	$\overline{\text{LED}}$ ◀	O	◀ LED $\overline{\text{ON}}$/OFF output.
89	VSS 2	–	GND.
90	VDD 2	–	Power supply input.
91	$\overline{\text{LED}}$ ■	O	■ LED $\overline{\text{ON}}$/OFF output.
92	$\overline{\text{LED}}$ ‖	O	‖ LED $\overline{\text{ON}}$/OFF output.
93	$\overline{\text{SOL 1}}$	O	DECK 1 Solenoid output.
94	$\overline{\text{SOL 2}}$	O	DECK 2 Solenoid output.
95	O-MOTOR	O	DECK MOTOR ON/$\overline{\text{OFF}}$ output.
96	I-$\overline{\text{IFC}}$/I-SUB Q	I	Tune IF count serial data input /CD SUB Q data input.

Pin No.	Pin Name	I/O	Description
97	I-$\overline{\text{STEREO}}$/O-SQCLK	I/O	Tuner stereo detected input/CD SQ CLOCK output.
98	I-RDS-DATA/O-DATA	I/O	RDS data input/CD data output.
99	O-CDCE	O	CD CE output.
100	O-CDCLK	O	CD CLOCK output.

IC, LC72131

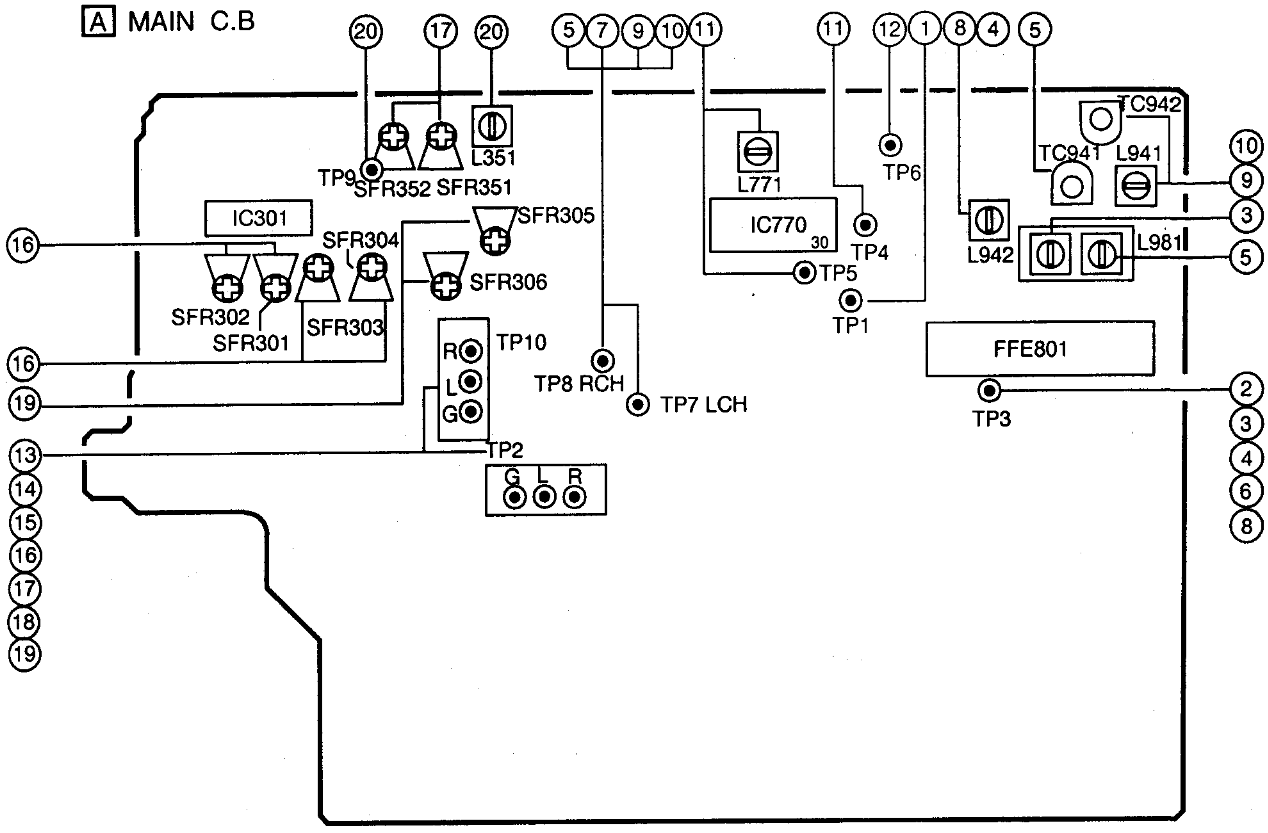
<table>
<tr><th>Pin No.</th><th>Pin Name</th><th>I/O</th><th>Description</th></tr>
<tr><td>1</td><td>XIN</td><td rowspan="2">I/O</td><td rowspan="2">A crystal oscillator (7.2MHz) is connected between these pins.</td></tr>
<tr><td>22</td><td>XOUT</td></tr>
<tr><td>2</td><td>NC</td><td>-</td><td>Not used.</td></tr>
<tr><td>3</td><td>CE</td><td>I</td><td>To enable the IC. Active "H".</td></tr>
<tr><td>4</td><td>DI</td><td>I</td><td>Digital data input from CPU (LC866548V-5E54) when relevant key is operated. Active "H".</td></tr>
<tr><td>5</td><td>CL</td><td>I</td><td>To clock in the data DI.</td></tr>
<tr><td>6</td><td>DO</td><td>O</td><td>Digital data output to CPU (LC866548V-5E54).</td></tr>
<tr><td>7</td><td>T-BASE</td><td>O</td><td>Outputs a reference clock signal (8Hz) for the clock.</td></tr>
<tr><td>8</td><td>$\overline{\text{MONO}}$ / BEAT</td><td>O</td><td>Outputs "H" when MONO / BEAT is switched.</td></tr>
<tr><td>9</td><td>$\overline{\text{FM}}$ /SW</td><td>O</td><td>Output "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>H</td><td>L</td><td>H</td><td>H</td><td>L</td><td>H</td><td>L</td><td>L</td></tr>
</table></td></tr>
<tr><td>10</td><td>$\overline{\text{MW}}$/SW</td><td>O</td><td>Outputs "L" or "H" as follows:
<table>
<tr><th colspan="2">2 BAND</th><th colspan="3">3 BAND</th><th colspan="3">3 BAND</th></tr>
<tr><td>AM</td><td>FM</td><td>LW</td><td>MW</td><td>FM</td><td>MW</td><td>SW</td><td>FM</td></tr>
<tr><td>L</td><td>L</td><td>H</td><td>L</td><td>L</td><td>L</td><td>H</td><td>L</td></tr>
</table></td></tr>
<tr><td>11</td><td>IF-MUTE</td><td>O</td><td>To control internal counter.</td></tr>
<tr><td>12</td><td>IF-IN</td><td>I</td><td>General purpose counter input.</td></tr>
<tr><td>13</td><td>$\overline{\text{TUNE}}$</td><td>I</td><td>Receives "L" when station is tuned.</td></tr>
<tr><td>14</td><td>NC</td><td>-</td><td>Not used.</td></tr>
<tr><td>15</td><td>AM-IN</td><td>I</td><td>Receives the AM local oscillator frequency signal.</td></tr>
<tr><td>16</td><td>FM-IN</td><td>I</td><td>Receives the FM local oscillator frequency signal.</td></tr>
<tr><td>17</td><td>VDD</td><td>-</td><td>Supply power to IC (+5V).</td></tr>
<tr><td>18</td><td>PD</td><td>O</td><td>PLL charge pump output.</td></tr>
<tr><td>19</td><td>A-IN</td><td>I</td><td rowspan="2">The MOS transistor for PLL active low pass filter.</td></tr>
<tr><td>20</td><td>A-OUT</td><td>O</td></tr>
<tr><td>21</td><td>VSS</td><td>-</td><td>Ground.</td></tr>
</table>

IC, NJW1102B

Pin No.	Pin Name	I/O	Description
1	LLI	I	L channel BPF in.
2	LBPF	O	L channel BPF feed back out.
3	RLI	I	R channel BPF in.
4	RBPF	O	R channel BPF feed back out.
5	LT	O	L channel selector #1 out.
6	RT	O	R channel selector #1 out·
7	LIN	I	L channel signal input.
8	RIN	I	R channelsignal input.
9	HOLDC	I	Auto input balance control.
10	VCC	–	Power supply.
11~13	NGC 3~1	I	Noise sequencer control.
14	VDD	–	Power supply.
15	DATA	I	Serial data input.
16	SCK	I	Serial clock input.
17	REQ	I	Serial request (strobe) input.
18	IDS	I	ID select sw.
19	AUX1	O	AUX1 output (serial data change parallel output).
20	AUX2	O	AUX2 output (serial data change parallel output).
21	VSS	–	GND.
22	LOUT	O	L channel signal output.
23	ROUT	O	R channel signal output.
24	CT	O	Center channel output (before trimmer).
25	CTI	I	Center channel trimmer input.
26	CTC	O	Center channel trimmer coupling capacitor out.
27	COUT	O	Center channel trimmer output.
28	ST	O	Surround channel output (before trimmer).
29	STI	I	Surround channel trimmer input.
30	STC	O	Surround channel trimmer coupling capacitor out.
31	SOUT	O	Surround channel trimmer output.
32	SMRI	I	Surround channel amp (front L,R mix) input.
33	SMRO	O	Surround channel amp (front L,R mix) output.
34	CMC	O	Center mode control.
35	SD	O	Selector #2 output (to surround channel delay).
36	SIMB	I	Selector #2 input B (L-R).
37	SIMA	I	Selector #2 input A (L+R).
38	L+R	O	L+R channel output.
39	L-R	O	L-R channel output.
40	GND	–	Ground.
41	VREF	I	VREF in.
42	VREFG	O	Vref out.
43	IREF	I	Iref in.

44	DBIN	I	To modify B NR decoder input.
45	LPIN	I	From surround channel delay input.
46~48	DBC 1~3	I	Dolby B NR control 1~3.
49	NC	–	Not used.
50~55	PSC 1~6	I	Dual time constant and threshold switches control.
56~63	RLC 1~8	I	Full wave rectifier and log difference amp control.
64	NC	–	Not used.

A MAIN C.B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TP9
SFR352
SFR351
L351
IC301
SFR305
SFR304
SFR306
SFR302
SFR301
SFR303
TP10
R
L
G
TP8 RCH
TP7 LCH
TP2
G L R
L771
IC770
30
TP6
TP4
TP5
TP1
TC942
TC941
L941
L942
L981
FFE801
TP3
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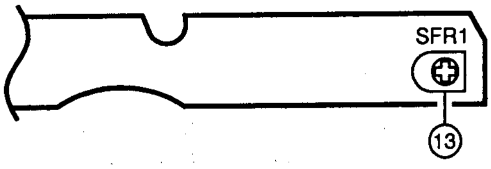
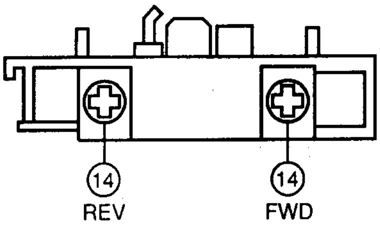
F DECK C.B



DECK-1 P, DECK-2 R / P / E HEAD



< TUNER SECTION >

1. Clock Check
   Settings : • Test point : TP1
   Method : Set to MW 1710kHz[U,LH,HR],1602kHz[EZ,K] and check that the test point is 2160kHz ± 0.045kHz [U,LH,HR], 2052kHz ± 0.045kHz[EZ,K]

2. AM(MW) VT Check (U,LH,EZ,K)
   Settings : • Test point : TP3 (VT)
   Method : Set to AM(MW) 1710kHz, 1602kHz and check that the test point is 6.0V ± 1.0V [U,LH], 7.5V ± 1.0V [EZ,K]

3. MW VT Adjustment (HR)
   Settings : • Test point : TP3 (VT)
   • Adjustment location : L981
   Method : Set to MW 1710kHz and adjust L981 so that the test point becomes 8.5V ± 0.05V. Then set to MW 530kHz and check that the test point is more than 0.3V.

4. LW VT Adjustment (EZ,K)
   Settings : • Test point : TP3 (VT)
   • Adjustment location : L942
   Method : Set to LW 144kHz and adjust L942 so that the test point becomes 1.3V ± 0.05V.

5. AM(MW) Tracking Adjustment
   Settings : • Test point : TP7, TP8
   • Adjustment location :

L981	1000kHz [U,LH]
L981	999kHz [EZ, K]
L981	600kHz [HR]
TC941	1400kHz [HR]

   Method : Set to AM(MW) 1000kHz[U,LH], 999kHz[EZ,K] and adjust L981 so that the test point becomes maximum.
   Set up TC941 to center before adjustment. The level at 600 kHz is adjusted to MAX by L981. Then the level at 1400 kHz is adjusted to MAX by TC941.[HR]

6. FM VT Check

Settings : • Test point : TP3 (VT)
Method : Set to FM 108.0MHz, 87.5MHz and check that the test point is less than 8.5V (108.0MHz),more than 1.5V (87.5MHz).

7. FM Tracking Check

Settings : • Test point : TP7, TP8
• Input level : adjustable
Method : • Set to FM 98.0MHz and check that the test point is 2 ± 6dB[U,LH,HR], 6 ± 6dB[EZ,K].

8. SW VT Adjustment (HR)

Settings : • Test point : TP3 (VT)
• Adjustment location : L942
Method : Set to SW 17.9MHz and adjust L942 so that the test point becomes 7.0V ± 0.05V.

9. SW Tracking Adjustment (HR)

Settings : • Test point : TP7, TP8
• Adjustment location :
L941 .... 5.9MHz
TC942 .... 17.9MHz
Method : Set up TC942 to center before adjustment.
The level at 5.9MHz is adjust to MAX by L941.
Then the level at 17.9MHz is adjust to MAX by TC942.

10. LW Tracking Adjustment (EZ,K)

Settings : • Test point : TP7, TP8
• Input level : adjustable
• Adjustment location :
L941 .... 144kHz
TC942 .... 290kHz
Method : Set up TC942 to center before adjustment.
The level at 144kHz is adjust to MAX by L941.
Then the level at 290kHz is adjust to MAX by TC942.

11. DC Balance / Mono Distortion Adjustment

Settings : • Test point : TP4, TP5
• Adjustment location : L771
• Input level : 54dB
Method : Set to FM 98.0MHz and adjust L771 so that the voltage between TP4 and TP5 becomes 0V ± 0.04V.
Next, check that the distortion is less than 1.3%

12. Auto Stop Level Check

Settings : • Test point : TP6
• Input level : adjustable
Method : Set to FM 98.0 MHz and check that the voltage low about 0.1V. After that voltage high about 7.0V out by 2dB down.

AM(MW)
Settings : • Input level : adjustable
Method : Check auto stop at AM(MW) 1000kHz[U,LH], MW 999kHz[EZ,K,HR] and the level is 35 ~ 60dB.

FM
Settings : • Input level : adjustable
Method : Check auto stop at FM 98.0MHz and the level is 25dB ± 10dB.

SW (HR)
Settings : • Input level : adjustable
Method : Check auto stop at SW 12MHz and the level is less than 60 dB.

< DECK SECTION >

13. Tape Speed Adjustment

Settings : • Test tape : TTA-100
• Test point : TP2[U,LH,HR], TP10[EZ,K]
• Adjustment location : SFR1
Method : Play back the test tape and adjust SFR1 so that the frequency counter reads 3000Hz ± 5Hz.

14. Head Azimuth Adjustment (DECK 1, DECK 2)

Settings : • Test tape : TTA-300
• Test point : TP2[U,LH,HR], TP10[EZ,K]
• Adjustment location : Head azimuth adjustment screw
Method : Play back the 10kHz signal of the test tape and adjust screw so that the output becomes maximum.
Next, perform on each FWD PLAY and REV PLAY mode.

15. PB Frequency Response Check (DECK 1, DECK 2)

Settings : • Test tape : TTA-300
• Test point : TP2[U,LH,HR], TP10[EZ,K]
Method : Play back the 315Hz and 10kHz signals of the test tape and check that the output ratio of the 10kHz signal with respect to that of the 315Hz signal is within 2dB.

16. PB Sensitivity Adjustment (DECK 1, DECK 2)

Settings : • Test tape : TTA-200
• Test point : TP2[U,LH,HR],TP10[EZ,K]
• Adjustment location :
SFR301 (DECK 1, Lch)
SFR302 (DECK 1, Rch)
SFR303 (DECK 2, Lch)
SFR304 (DECK 2, Rch)
Method : Play back the test tape and adjust SFRs so that the output level of the test point becomes 330mV (Deck1)[U,LH,HR], 300 mV(Deck 2)[U,LH,HR], 245 mV(Deck 1,2)[EZ,K].

17. REC/PB Frequency Response Adjustment

Settings : • Test tape : TTA-602
• Test point : TP2[U,LH,HR],TP10[EZ,K]
• Input signal : 1kHz / 10kHz (LINE IN)
• Adjustment location : SFR351 (Lch)
SFR352 (Rch)
Method : Apply a 1kHz signal and REC mode.
Then adjust OSC attenuator so that the output level at the test point becomes 210mV[U,LH,HR], 170mV[EZ,K]. Record and play back the 1kHz and 10kHz signals and adjust SFRs so that the output of the 10kHz signals becomes 0dB ± 0.5dB with respect to that of the 1kHz signal.

18. REC/PB Sensitivity Check (U,LH,HR)

Settings : • Test tape : TTA-602
• Test point : TP2
• Input signal : 1kHz (LINE IN)
Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP2 becomes 21mV. Record and play back the 1kHz signals and check that the output is 17mV ± 3dB.

19. REC/PB Sensitivity adjustment (EZ,K)

Settings : • Test tape : TTA-602
• Test point : TP10
• Input signal : 1kHz (LINE IN)

- Adjustment location : SFR305 (Lch)
  SFR306 (Rch)

Method : Apply a 1kHz signal and REC mode. Then adjust OSC attenuator so that the output level at the TP10 becomes 17mV. Record and play back the 1kHz signals and adjust the SFRs so that the output is 17mV ± 0.5dB.

20. Bias OSC Frequency Adjustment

Settings : • Test point : TP9
• Adjustment location : L351

Method : Set to the REC mode. Adjust L351 so that the frequency counter of the test point is 85kHz ± 1kHz.

PRACTICAL SERVICE FIGURE

<TUNER SECTION>

<FM SECTION>

IHF Sensitivity :	2dB ± 6dB (U,LH,HR)
	6dB ± 6dB (EZ,K)
	[at 87.5 / 98.0MHz/ 108.0MHz]
S/N 50dB Quieting sensitivity :	
	STEREO
	30dB ± 6dB (U,LH,HR)
	34dB ± 5dB (EZ,K)
	[at 87.5 / 98.0 / 108.0MHz]
Signal to noise ratio :	STEREO
	More than 64dB (U,LH,HR)
	More than 59dB (EZ,K)
	[at 98.0MHz]
	MONO
	More than 65dB (U,LH,HR)
	More than 60dB (EZ,K)
	[at 98.0MHz]
Distortion :	STEREO
	Less than 2%
	[at 98.0MHz]
Stereo separation :	More than 25dB (U,LH,HR)
	More than 22dB (EZ,K)
	[at 98.0MHz]
Intermediate frequency :	10.7MHz

<AM(MW) SECTION>

Sensitivity :	55dB ± 5dB
(S/N 20 dB)	[at 600kHz (U,LH)]
	[at 603kHz (HR,EZ,K)]
	53dB ± 5dB
	[at 1000 / 1400kHz (U,LH)]
	[at 999 / 1404kHz (HR,EZ,K)]
Distortion :	Less than 1.5%
	[at 1000kHz (U,LH)]
	[at 999kHz (HR,EZ,K)]
Intermediate frequency :	450kHz

<SW SECTION> (HR)

Sensitivity :	38dB ± 5dB (5.9MHz)
(S/N 20dB)	33dB ± 5dB (12.0MHz)
	30dB ± 8dB (17.9MHz)
Distortion :	Less than 1.5% (12.0MHz)
Intermediate frequency :	450kHz

<LW SECTION> (EZ,K)

Sensitivity :	66dB ± 5dB (144kHz)
(S/N 20dB)	63dB ± 5dB (198/290kHz)
Distortion :	Less than 1.5% (198kHz)
Intermediate frequency :	450kHz

<DECK SECTION>

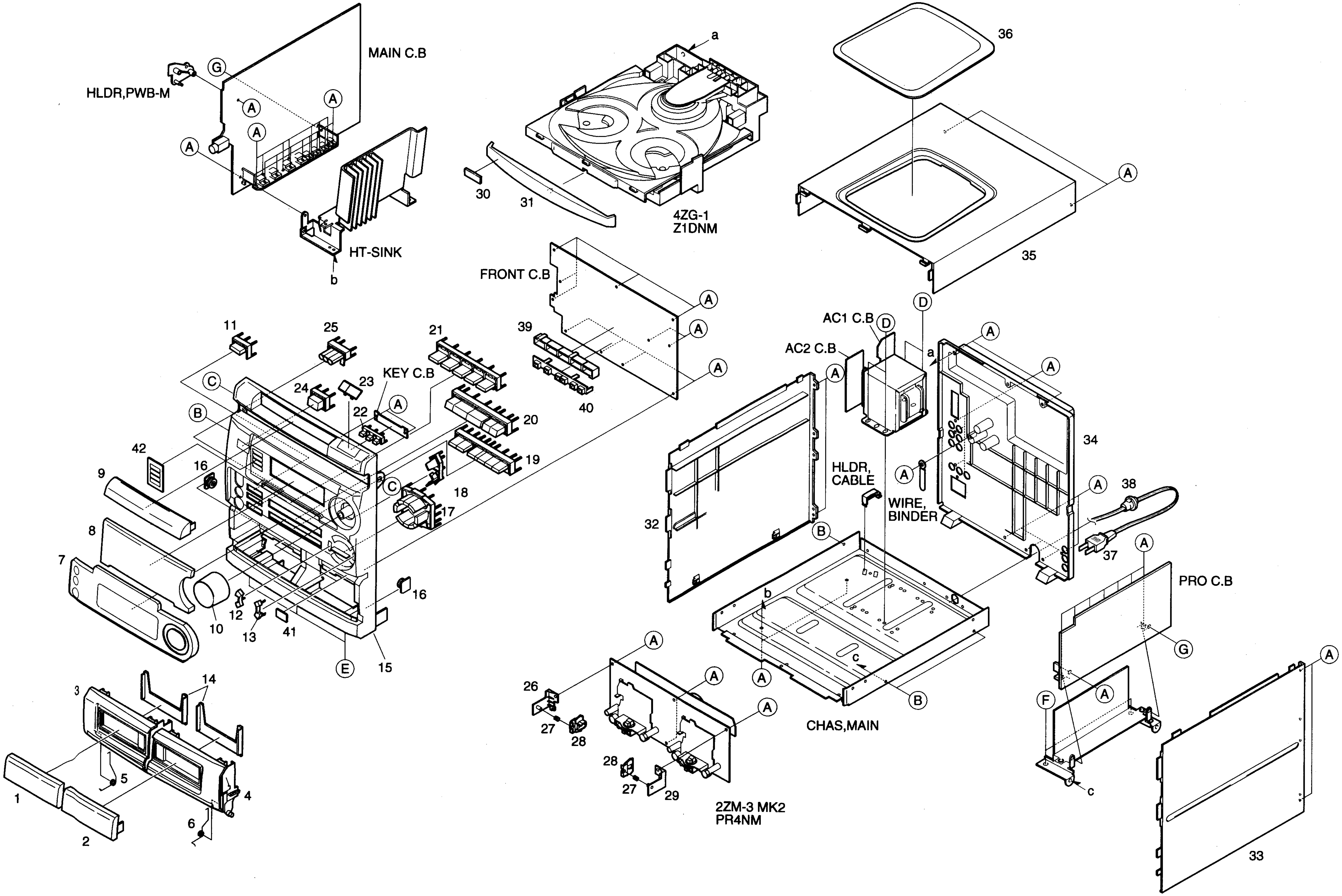
Tape speed :	3000Hz ± 45Hz
Wow & flutter :	Less than 0.18% (R.M.S)
Take-up torque :	30 ~ 55g-cm (FWD, REV)
F.F & REW torque :	75 ~ 180g-cm (F.F)
	75 ~ 130g-cm (REW)
Back tension :	2 ~ 7g-cm (DECK1,2)
PB Output level :	330mV ± 1dB (DECK1)[U,LH,HR]
	300mV ± 1dB (DECK2)[U,LH,HR]
	300mV ± 1dB (DECK1,2)[EZ,K]
REC/PB Output level :	180mV ± 1dB
Distortion (REC/PB) :	Less than 2.0% (NORM, CrO2,1kHz)
Noise level (PB/REC) :	Less than 2.0mV (NORM, DOLBY OFF/ ON B.C)[U,LH,HR]
	Less than 2.0/1.2mV (NORM, DOLBY OFF/ON B.C)[EZ,K]
	Less than 1.5mV (CrO2, DOLBY OFF/ ON B.C)[U,LH,HR]
	Less than 1.5/0.9mV (CrO2, DOLBY OFF/ON B.C)[EZ,K]
Crosstalk :	More than 60dB (1kHz, NORM)
Channel separation :	More than 30dB (1kHz, NORM)
Erasing ratio :	More than 60dB (at 125Hz,CrO2)
Test tape :	NORM : TTA-602
	CrO2 : TTA-615

ACCESSORIES / PACKAGE LIST

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

	REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
	1	87-NFT-910-019		IB, U(ESF)<U>
	1	87-NFT-916-019		IB, E(EGFSI)M<EZ>
	1	87-NFT-915-019		IB, K(E)M<K>
	1	87-NFT-912-019		IB, LH(ES)I<LH>
	1	87-NFT-911-019		IB, H(ECA)I<HR>
	2	87-A90-064-016		FEEDER-ANT,FM (SHS)<U,LH,HR>
	2	87-043-106-016		ANT,FM1007AWG<EZ,K>
	3	87-006-225-019		ANT,LOOP ANT NC2<EXP HR>
	3	87-A90-054-016		ANT,LOOP AM-CONC<HR>
	4	87-043-095-019		ANT,WIRE<HR>
	5	87-NFR-610-019		RC UNIT,RC-7AS09
⚠	6	87-A90-312-016		PLUG,CONVERSION WTN-1157R1<LH,HR>

MECHANICAL EXPLODED VIEW 1 / 1


MAIN C.B
HLDR,PWB-M
G
A
HT-SINK
a
b
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31
4ZG-1
Z1DNM
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35
FRONT C.B
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KEY C.B
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AC1 C.B
AC2 C.B
D
HLDR,
CABLE
WIRE,
BINDER
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38
37
PRO C.B
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c
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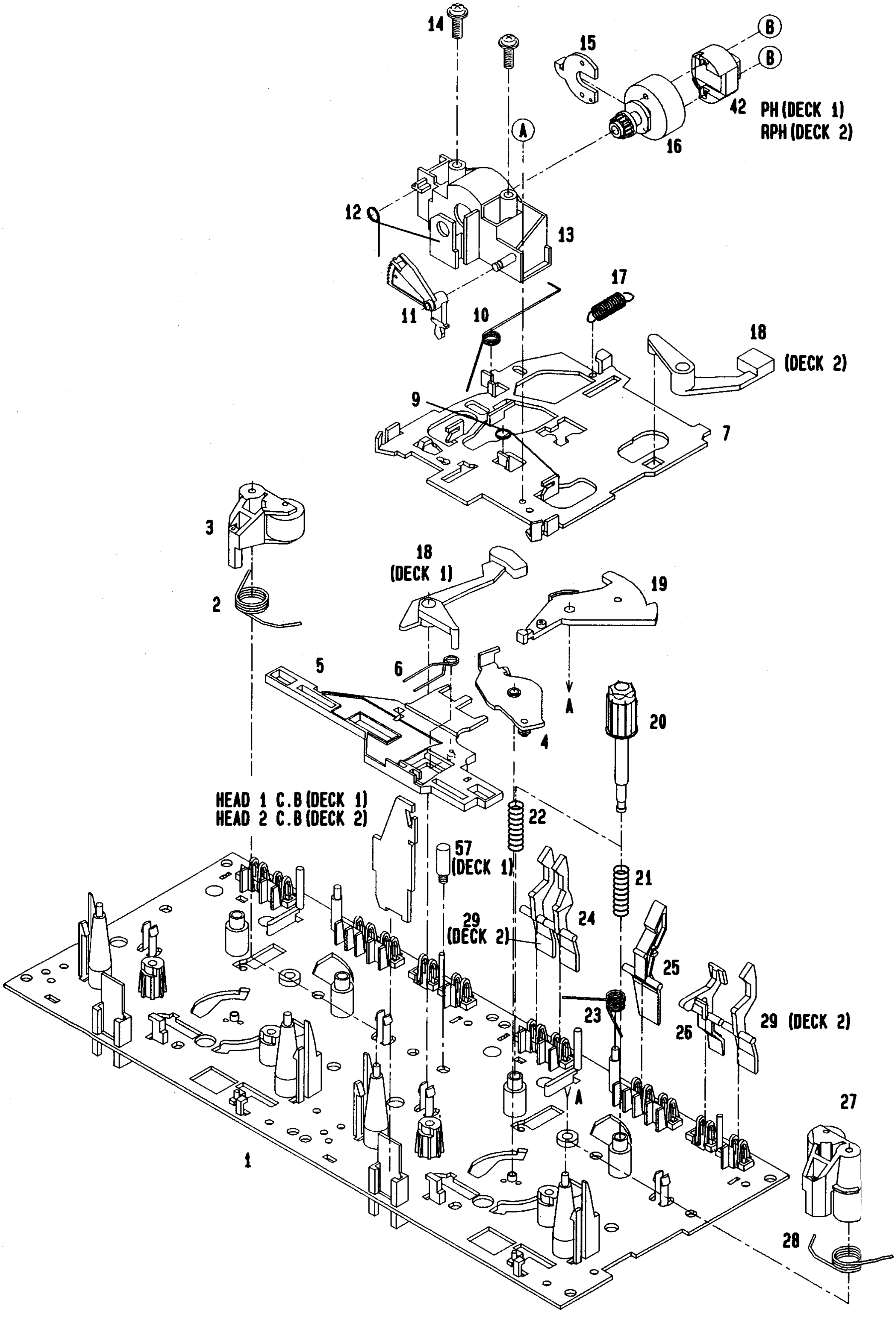
2ZM-3 MK2
PR4NM
CHAS,MAIN

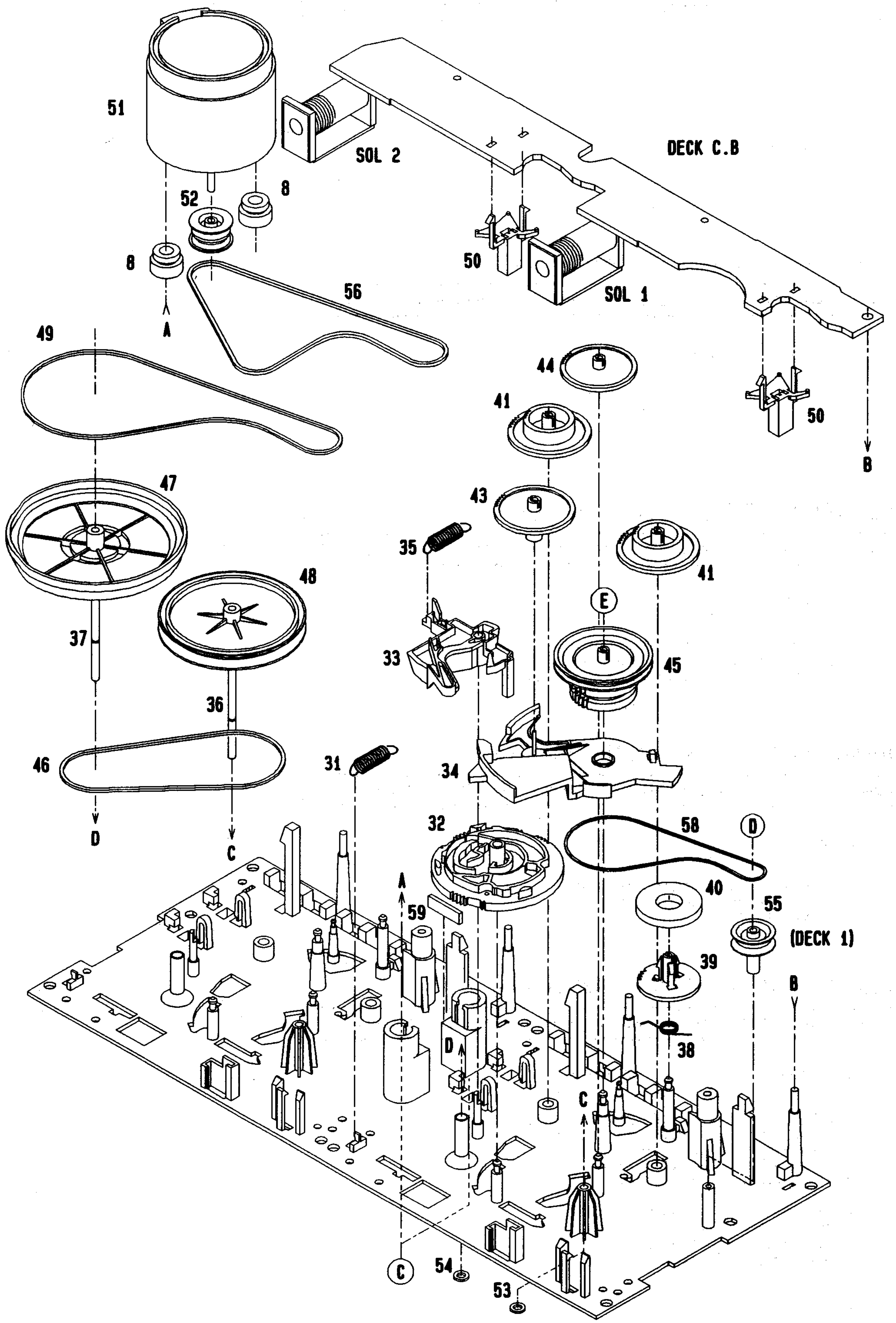
MECHANICAL PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NF6-041-010		WINDOW,CASS 1
2	87-NF6-042-010		WINDOW,CASS 2
3	87-NF6-013-010		BOX,CASS 1E<U,K,EZ>
3	87-NF6-011-010		BOX,CASS 1H<HR,LH>
4	87-NF6-014-010		BOX,CASS 2E<U,K,EZ>
4	87-NF6-012-010		BOX,CASS 2H<HR,LH>
5	82-NF5-218-010		SPR-T,EJECT 1(SIN)
6	82-NF5-219-010		SPR-T,EJECT 2(SIN)
7	87-NFT-016-010		PANEL,FR E<EZ>
7	87-NFT-015-010		PANEL,FR H<HR,LH>
7	87-NFT-014-010		PANEL,FR K<K>
7	87-NFT-013-010		PANEL,FR U<U>
8	87-NFT-006-010		WINDOW,DISPLAY E<EZ>
8	87-NFT-005-010		WINDOW,DISPLAY H<EXP EZ>
9	87-NF6-043-010		WINDOW,CD
10	87-NF6-036-010		KNOB,RTRY VOL
11	87-NFT-017-010		KEY,PRO E<EZ>
11	87-NFT-018-110		KEY,PRO H<EXP EZ>
12	87-NF6-040-010		PANEL,T-BASS
13	87-NF6-039-010		PANEL,BBE
14	86-NF6-061-010		REFLECTOR,CASS
15	87-NFT-003-010		CABI,FR E<K,EZ>
15	87-NFT-001-010		CABI,FR H<HR,LH>
15	87-NFT-002-010		CABI,FR U<U>
16	87-063-165-010		OIL-DMPR,150
17	87-NF6-026-010		KEY,CURSOR H
18	87-NF6-028-010		KEY,MIC
19	87-NF6-033-010		KEY,REC E<K,EZ>
19	87-NF6-032-010		KEY,REC H<U,HR,LH>
20	87-NF6-049-010		KEY,ASSY PLAY
21	87-NF6-029-010		KEY,FUNCTION
22	87-NF6-045-010		KEY,DISC
23	87-NF6-024-010		KEY,CD
24	87-NF6-025-010		KEY,POWER
25	87-NF6-034-010		KEY,KARAOKE
26	87-NF4-216-010		HLDR,LOCK 1
27	82-NF5-228-010		SPR-C,LOCK
28	82-NF5-229-010		PLATE,LOCK(*)
29	87-NF4-217-010		HLDR,LOCK 2
30	82-NE6-067-010		BADGE,AIWA 30N
31	87-NF6-018-010		PANEL,TRAY E
32	87-NF6-022-010		PANEL,LEFT
33	87-NF6-023-010		PANEL,RIGHT
34	87-NFT-033-010		CABI,REAR EZSTNM<EZ>
34	87-NFT-029-010		CABI,REAR HRST<HR>
34	87-NFT-032-010		CABI,REAR KSTNM<K>
34	87-NFT-030-010		CABI,REAR LHST<LH>
34	87-NFT-028-010		CABI,REAR UST<U>
35	87-NF6-021-010		PANEL,TOP
36	86-NF6-007-010		WINDOW,TOP<EXP U>
36	86-NF6-101-010		WINDOW,TOP UL<U>
⚠ 37	87-050-016-010		AC CORD ASSY,E<EZ>
⚠ 37	87-050-079-010		AC CORD ASSY,E BLK<HR,LH>
⚠ 37	87-A80-023-010		AC CORD ASSY,K 3P W<K>
⚠ 37	87-050-053-010		AC CORD ASSY,U-2<U>
38	87-085-185-010		BUSHING,AC CORD(E)CM-22B<EXP U>
38	87-085-189-010		BUSHING,AC CORD(U) CM-22C<50U>
39	87-NF6-201-010		GUIDE,FUN
40	87-NF6-202-010		GUIDE,PLAY
41	81-532-080-010		LBL,CASS-COMPT
42	87-NFT-031-010		PLATE,PRO N
A	87-067-703-010		BVT2+3-10 W/0 SLOT
B	87-721-096-410		QT2+3-10 W/O SLOT
C	87-721-097-410		QT2+3-12 W/O SLOT
D	87-078-019-010		S-SCREW,IT+4-6 SWCH12A
E	87-067-688-010		BVTT+3-6
F	87-067-584-010		BVT2+3-6 W/O SLOT
G	87-NF4-224-010		S-SCREW,IT3B+3-8 CU

TAPE MECHANISM EXPLODED VIEW 1 / 1


14
15
Ⓑ
Ⓑ
42 PH (DECK 1)
RPH (DECK 2)
Ⓐ
Ⓐ
16
12
13
17
11
10
18
(DECK 2)
9
7
3
18
(DECK 1)
19
2
5
6
4
A
20
HEAD 1 C.B (DECK 1)
HEAD 2 C.B (DECK 2)
22
57
(DECK 1)
21
24
29
(DECK 2)
25
23
26
29 (DECK 2)
A
27
1
28



TAPE MECHANISM PARTS LIST 1 / 1

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

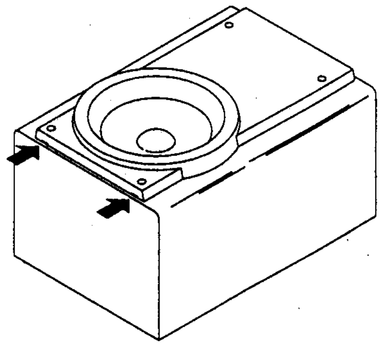
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	82-ZM3-301-519		CHAS ASSY,M2
2	82-ZM1-258-110		SPR-T,PINCH L
3	82-ZM1-341-110		LVR ASSY,PINCH L2
4	82-ZM1-333-010		PLATE,LINK 2
5	82-ZM1-266-11K		LVR,DIR
6	82-ZM1-214-010		SPR-T,DIR
7	82-ZM1-206-81K		CHAS,HEAD
8	82-ZM3-307-019		CUSH-G,DIA3.7-8-3.2
9	82-ZM1-269-219		SPR-T,BRG
10	82-ZM1-219-119		SPR-T,LINK
11	82-ZM1-210-119		GEAR,H T
12	82-ZM1-213-019		SPR-T,HEAD
13	82-ZM1-207-619		GUIDE,TAPE
14	86-ZM4-206-010		S-SCREW,AZIMUTH
15	82-ZM1-314-119		PLATE,HEAD
16	82-ZM1-208-119		HLDR,HEAD
17	82-ZM1-218-019		SPR-E,HB
18	82-ZM1-263-110		LVR,EJECT L (DECK 1)
18	82-ZM1-264-010		LVR,EJECT R (DECK 2)
19	82-ZM1-222-21K		LVR,PLAY
20	82-ZM1-217-319		REEL TABLE
21	82-ZM1-244-510		SPR-C,BT
22	82-ZM1-285-310		SPR-C,BT L
23	82-ZM1-257-019		SPR-T,CAS
24	82-ZM1-241-319		LVR,MC
25	82-ZM1-242-019		LVR,CAS
26	82-ZM1-243-019		LVR,STOP
27	82-ZM1-344-110		LVR ASSY,PINCH R2
28	82-ZM1-259-110		SPR-T,PINCH R
29	82-ZM1-240-11K		LVR,REC (DECK 2)
31	82-ZM1-255-319		SPR-E,LVR DIR
32	82-ZM3-305-01K		GEAR,CAM M2
33	82-ZM1-227-21K		LVR,TRIG
34	82-ZM3-306-11K		LVR,FR M2
35	82-ZM1-265-119		SPR-E,TRIG
36	82-ZM1-236-019		CAPSTAN N 2-41.5
37	82-ZM1-239-019		CAPSTAN N 2.2-41.7
38	82-ZM1-322-019		SPR-T,FR60
39	82-ZM1-220-219		GEAR,IDLER
40	82-ZM3-616-019		RING MAGNET 4
41	82-ZM1-216-31K		GEAR,REEL
42	87-A90-319-010		HEAD,PH HADKH2 FPC
42	87-A90-320-010		HEAD,RPH HADKH5 FPC
43	82-ZM1-225-21K		GEAR,FR
44	82-ZM1-226-019		GEAR,REW
45	82-ZM3-333-310		SLIP DISK ASSY 2
46	82-ZM1-338-010		BELT FR4
47	82-ZM1-349-110		FLY-WHL,R W(DECK 2)
47	82-ZM3-338-110		FLY-WHL,R3 W(DECK 1)
48	82-ZM1-348-010		FLY-WHL,L W(DECK 2)
48	82-ZM1-348-010		FLY-WHL,L W(DECK 1)
49	82-ZM3-329-210		BELT,SBU R2
50	82-ZM1-245-210		HLDR,IC
51	87-045-347-019		MOT,SHU2L 70(M1)
52	82-ZM3-221-010		PULLEY,MOT 2M
53	82-ZM1-288-019		SH,1.63-3.2-0.5 SLT
54	80-ZM6-243-019		SH,1.75-3.6-0.5 SLT
55	82-ZM3-335-210		PULLEY,COUPLER M3(DECK 1)
56	82-ZM3-337-010		BELT,SBU MOT 2
57	82-ZM3-339-010		SHAFT,COUPLER N3(DECK 1)
58	86-ZM1-206-010		BELT,MAIN L
59	82-ZM3-340-010		SH,BELT D2
A	85-ZM3-202-010		S-SCREW,TG
B	80-ZM6-207-019		V+1.6-7
C	82-ZM3-318-019		S-SCRW MOTOR M2
D	87-B10-043-010		W-P,0.99-4-0.25 SLT
E	82-ZM3-334-010		PW,2.16-6-0.4

SPEAKER DISSASSEMBLY INSTRUCTION

Type.1

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

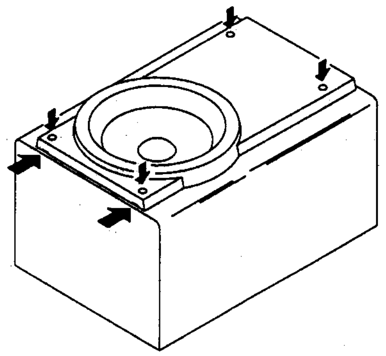
Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit andthen remove the speaker units.



Type.2

グリルフレームを外し、4個のゴムキャプをマイナスドライバーで端の方から持ち上げて外すと中にビスが有りますので、ビスを取り外します。矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットのビスを取り、スピーカーユニットを外してください。

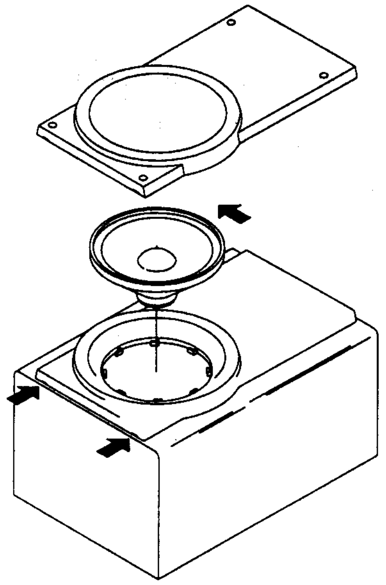
Remove the grill frame and four pieces of rubber caps by pulling out with a flat-bladed screwdriver. Remove the screws from hold where installed rubber caps. Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Remove the screws of each speaker unit and then remove the speaker units.



Type.3

矢印の位置にマイナスドライバーを差し込んで、パネルを外します。各々のスピーカーユニットの凹にマイナスドライバーを差し込んで、反時計方向に回転させスピーカーユニットを外してください。スピーカーユニット交換後は時計方向にクリック音がするまで、回転させて取り付けます。

Insert a flat-bladed screwdriver into the position indicated by the arrows and remove the panel. Turn the speaker unit to counterclockwise direction while inserting a flat-bladed screwdriver into one of the hollows arround speaker unit, and then remove the speaker unit. After replacing the speaker unit, install it turnning to clockwise direction unit "click" sound comes out.



SPEAKER PARTS LIST (SX-NA54<YU>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NSG-001-019		PANEL,FR R
2	87-NSG-002-019		PANEL,FR L
3	87-NSG-007-019		GRILLE,FRAME ASSY R
4	87-NSG-008-019		GRILLE,FRAME ASSY L
5	87-NSG-602-019		SPKR,W 160
6	87-NST-604-019		SPKR,T 60
7	87-NSG-605-019		SPKR,CORD

SPEAKER PARTS LIST (SX-R210<YU>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	83-VS3-019-010		GRILLE FRAME ASSY B<YUAST>
1	83-VS3-004-010		GRILLE FRAME ASSY<YUST>
2	83-VS3-601-010		SPEAKER
3	81-VSA-010-010		SPEAKER,CORD

SPEAKER PARTS LIST (SX-C400<YU>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-NSY-111-010		PANEL,FR ST
2	85-NSY-010-010		GRILLE FRAME ASSY<YUST>
2	85-NSY-017-010		GRILLE FRAME ASSY B<YUAST>
3	85-NSY-602-010		SPEAKER
4	83-NSM-010-010		SPEAKER,CORD

SPEAKER PARTS LIST (SX-NAV75<Y,YJ,YL>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

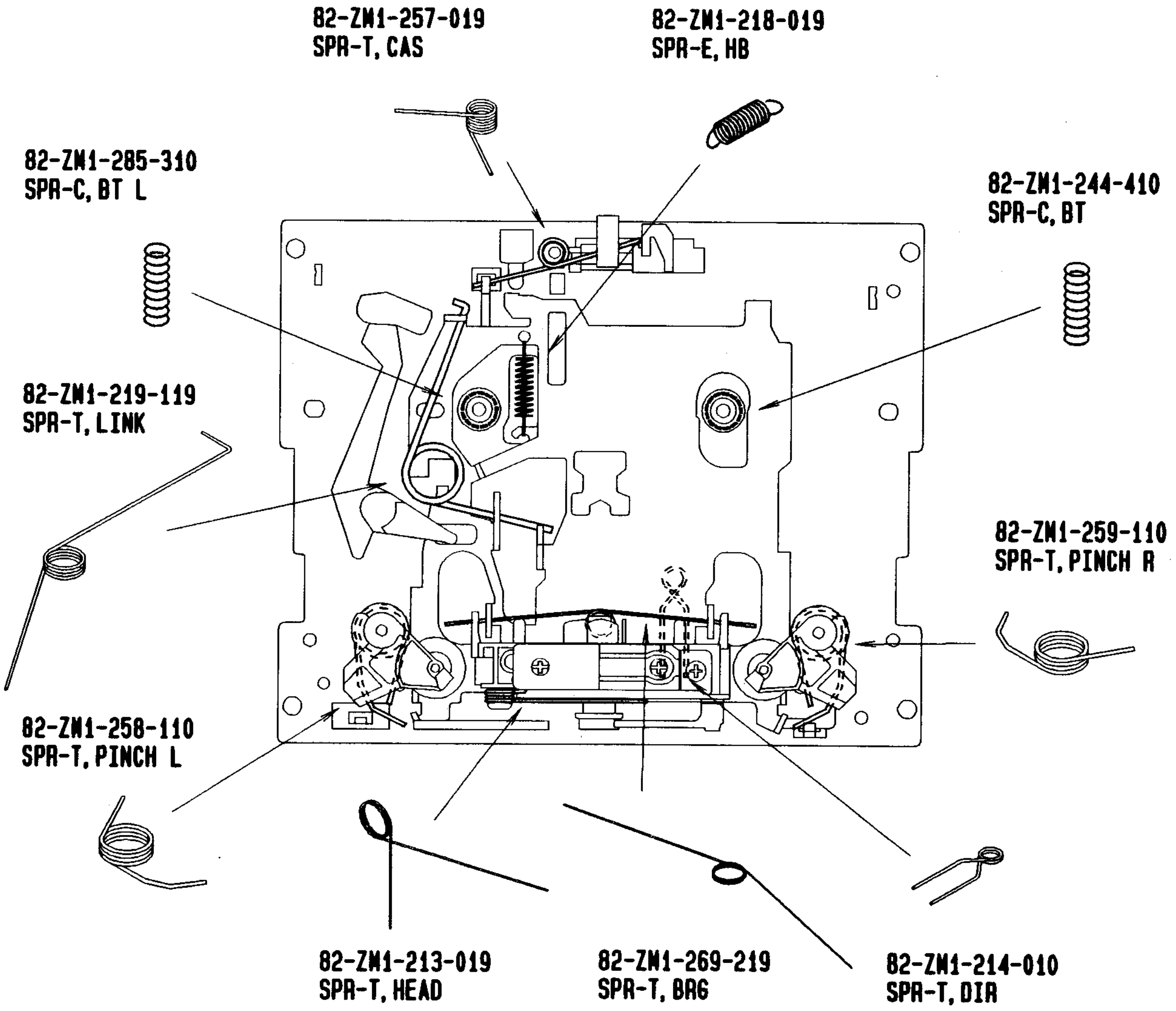
REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	87-NSR-009-019		GRILLE,FRAME ASSY
2	83-096-614-019		SPEAKER CODE
3	87-NST-610-019		TERMINAL,ASSY

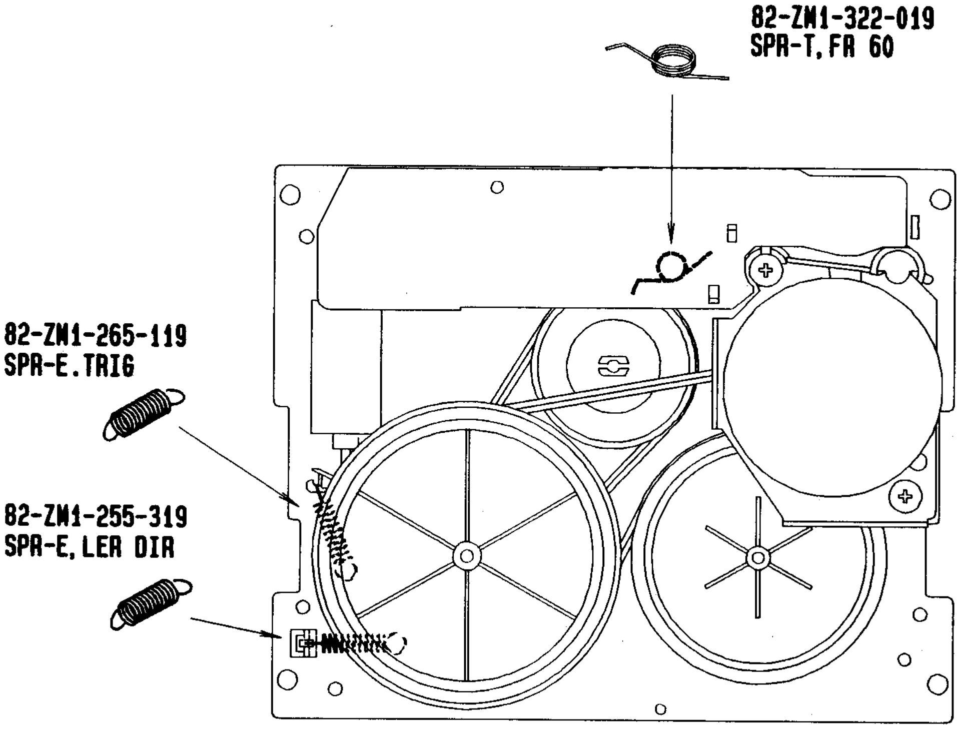
SPEAKER PARTS LIST (SX-C423<Y,YJ>)

If can't understand for Description please kindly refer to " REFERENCE NAME LIST ".

REF. NO.	PART NO.	KANRI NO.	DESCRIPTION
1	85-NSX-005-010		GRILLE,FRAME ASSY(R230)
1	85-NSY-010-010		GRILLE,FRAME ASSY(C400)
2	85-NSX-601-010		SPEAKER(R230)
2	85-NSY-602-010		SPEAKER(C400)
3	81-VSA-010-010		SPEAKER,CORD(R230)
3	83-NSM-010-010		SPEAKER,CORD(C400)
4	85-NSX-009-010		PANEL,FR(R230)
4	85-NSY-001-010		PANEL,FR(C400)
5	85-NSY-002-010		PANEL,REAR(C400)

SPRING APPLICATION POSITION


82-ZM1-257-019
SPR-T, CAS
82-ZM1-218-019
SPR-E, HB
82-ZM1-285-310
SPR-C, BT L
82-ZM1-244-410
SPR-C, BT
82-ZM1-219-119
SPR-T, LINK
82-ZM1-259-110
SPR-T, PINCH R
82-ZM1-258-110
SPR-T, PINCH L
82-ZM1-213-019
SPR-T, HEAD
82-ZM1-269-219
SPR-T, BRG
82-ZM1-214-010
SPR-T, DIR


82-ZM1-322-019
SPR-T, FR 60
82-ZM1-265-119
SPR-E.TRIG
82-ZM1-255-319
SPR-E, LER DIR

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL

サービス技術ニュース	
番号	連絡内容
G−　−	
G−　−	
G−　−	

アイワ株式会社
AIWA CO.,LTD.

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Tokyo Japan

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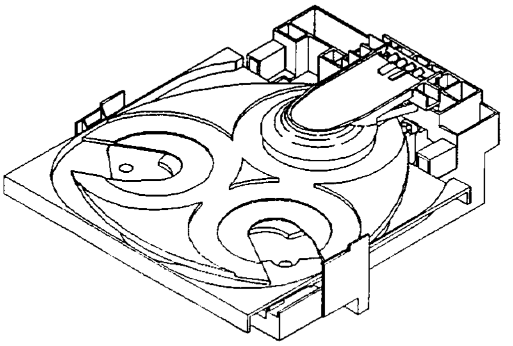
aiwa

aiwa SERVICE

4ZG-1
4ZG-1A
4ZG-1B
4ZG-1Z



CD MECHANISM

- BASIC CD MECHANISM: KSM-2 131 BAM
  3ZG-2 C1 / 3ZG-2 C2 / 3ZG-2 C5

- TYPE: English

BASIC NAME		DERIVATION NAME							
4ZG-1	*1	–	–	–	–	WR	–	–	–
	*2	G	D	F	R	–	V3L	V4L	V5
4ZG-1A		G	D	–	–	–	–	–	–
4ZG-1B		G	D	–	–	–	–	–	–
4ZG-1Z		–	D	–	–	–	–	–	–

- *1,*2, have the same BASIC NAME but the board structures are different. The CD BLOCK,VCD BLOCK of the WR are shown on the SERVICE MANUAL of each DERIVATION NAME .
- This mechanism has various derivation. Derivation name is indicated by the Service Manual for eath model.
- For different version of mechanism that may be introduced since the issue of this manual, only the new or modified points be discussed.

S/M Code No. 09-965-128-10T

SERVICE MANUAL

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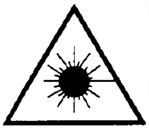
PROTECTION OF EYES FROM LASER BEAM DURING SERVICING

This set employs laser. Therefore, be sure to follow carefully the instructions below when servicing.

WARNING!

WHEN SERVICING, DO NOT APPROACH THE LASER EXIT WITH THE EYE TOO CLOSELY. IN CASE IT IS NECESSARY TO CONFIRM LASER BEAM EMISSION. BE SURE TO OBSERVE FROM A DISTANCE OF MORE THAN 30cm FROM THE SURFACE OF THE OBJECTIVE LENS ON THE OPTICAL PICK-UP BLOCK.



- Caution: Invisible laser radiation when open and interlocks defeated avoid expo-sure to beam.
- Advarsel: Usynlig laserståling ved åbning, når sikkerhedsafbrydere er ude af funktion. Undgå udsættelse for stråling.

VAROITUS!

Laiteen Käyttäminen muulla kuin tässä käyttöohjeessa mainit-ulla tavalla saattaa altistaa käyt-täjän turvallisuusluokan 1 ylit-tävälle näkymättömälle lasersäteilylle.

VARNING!

Om apparaten används på annat sätt än vad som specificeras i denna bruksanvising, kan användaren utsättas för osynling laserstrålning, som överskrider gränsen för laserklass 1.

CAUTION

Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radi-ation exposure.

ATTENTION

L'utilisation de commandes, réglages ou procédures autres que ceux spécifiés peut entraîner une dangereuse exposition aux radiations.

ADVARSEL!

Usynlig laserståling ved åbning, når sikkerhedsafbrydereer ude af funktion. Undgå udsættelse for stråling.

This Compact Disc player is classified as a CLASS 1 LASER product.
The CLASS 1 LASER PRODUCT label is located on the rear exterior.

CLASS 1	LASER PRODUCT
KLASSE 1	LASER PRODUKT
LUOKAN 1	LASER LAITE
KLASS 1	LASER APPARAT

This is the SERVICE MANUAL for the BASIC CD MECHANISM of BASIC NAME: 4ZG-1. This BASIC NAME includes the following models as shown under the SUFFIX name: DERIVATION NAME. Please use this manual with the separate SERVICE MANUAL for DERIVATION NAME.

BASIC CD MECHANISM: 4ZG-1 AGD
SUFFIX
(DERIVATION NAME)

BASIC NAME: 4ZG-1 (ORIGINAL MODEL)
4ZG-1A (SONY IC MODEL)
4ZG-1B (TOSHIBA IC MODEL)
4ZG-1Z (SANYO IC MODEL)

BASIC NAME		DERIVATION NAME							
4ZG-1	*1	—	—	—	—	WR	—	—	—
	*2	G	D	F	R	—	V3L	V4L	V5
4ZG-1A		G	D	—	—	—	—	—	—
4ZG-1B		G	D	—	—	—	—	—	—
4ZG-1Z		—	D	—	—	—	—	—	—

NOTE:
- *1 and *2 have the same BASIC NAME but the board structures are different.
- The CD BLOCK, VCD BLOCK of the WR is shown on the SERVICE MANUAL of each DERIVATION NAME.
- Model 4ZG-1 A, B and Z has "F" as the standard installation.

BOARD NAME / BASIC NAME		3CD C.B	LED C.B	T-T C.B	MOTOR C.B	MAIN VCD C.B	CD MECHA C.B	VCD C.B	DRIVE C.B
4ZG-1	*1	—	—	○	—	—	—	—	○
4ZG-1	*2	—	○	○	—	○	○	○ (EXCEPT V5)	—
4ZG-1A		○	○	○	○	—	—	—	—
4ZG-1B		○	○	○	○	—	—	—	—
4ZG-1Z		○	○	○	—	—	—	—	○

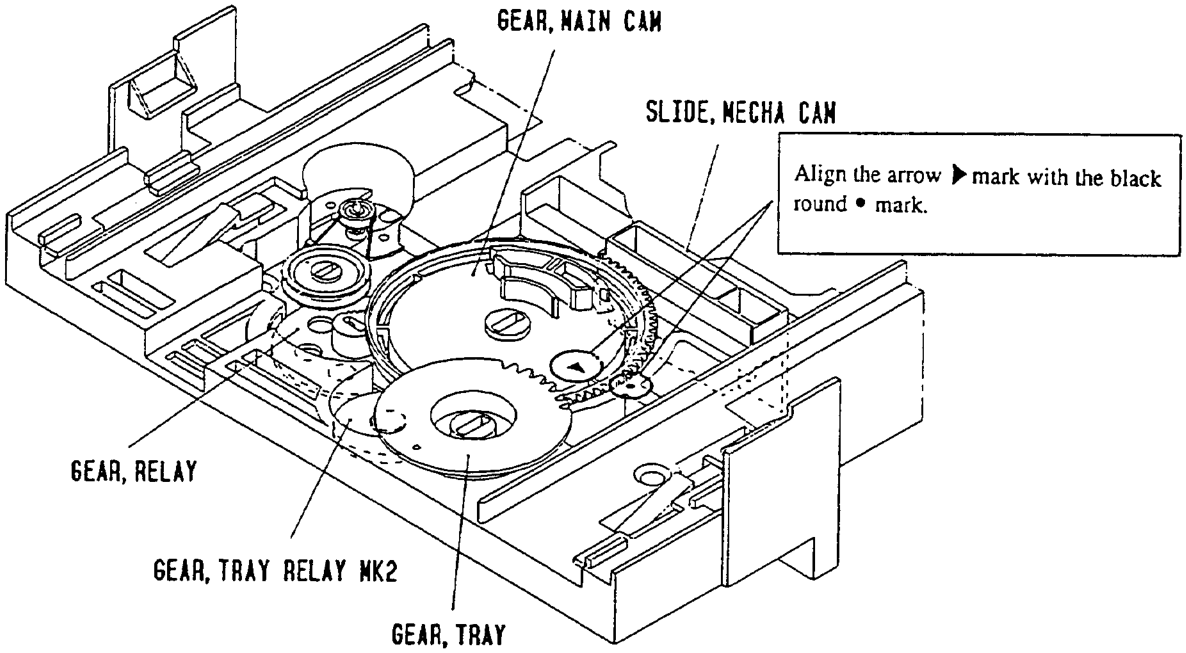
DERIVATION NAME

G: Supporting the CD graphic feature
D: Digital output function
F: CD WINDOW Flash function (LED: AMBER/GREEN)
R: Round Tray
WR: With out Video CD and CD graphic board.
V3L: Supporting the video CD function PAL
V4L: Supporting the video CD function PAL
V5: Supporting the video CD function

How to Adjust the Rotating Phase of the Gear, Main Cam

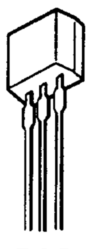
1) Push down the hooking catch of the CHAS. MECH, and remove the TRAY.
2) Align the arrow mark of the Gear, Main Cam with the black round mark of the CHAS, MECHA as shown below.
3) Confirm that the Slide, Mech Cam is located in the right position, then insert the TRAY gently.

Caution: If the rotating phase of the Gear, Main Cam is incorrectly adjusted, the chucking operation and tray movement will have malfunction.

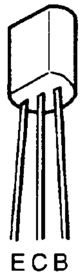

GEAR, MAIN CAM
SLIDE, MECHA CAM
GEAR, RELAY
GEAR, TRAY RELAY MK2
GEAR, TRAY

Align the arrow ▶ mark with the black round • mark.

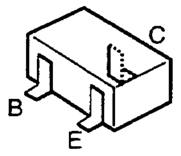
TRANSISTOR ILLUSTRATION



2SA933

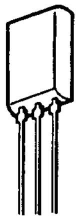


2SA1296
2SA1318
2SC1815
2SC2001
2SD655
2SD2172

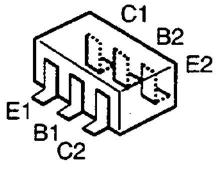


2SA1037
2SA1162
2SA1362
2SA1576
2SC2712
2SC3326
2SC4081
2SD1383

DTA123JK
DTA144TK
DTC114TK
DTC123JK
DTC124XK
DTC143TK
RN1441



2SD2005


C1
B2
E2
E1
B1
C2

HN1C03

4ZG-1

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	SC-L48-000-000		IC,CL480<V3L>
	S4-730-42X-010		IC,HD6473042F16(5EULF6)<V4L>
	SC-XD1-178-Q00		IC,CXD1178Q<V3L>
	SA-T27-C51-2R1		IC,AT27C512R-15JC<V3L>
	SX-D11-86X-010		IC,CXD1186CR(5EUNFC)<V4L>
	SC-008-K81-R10		IC,BR6265AF-10LL(5EUMFS)<V4L>
	ST-C51-425-6BJ		IC,TC514256BJ-70<V3L>
	SC-032-K81-MA0		IC,M5M5256CFP-70LL(5EUMFS)<V4L>
	87-001-948-080		IC,PST572CMT(5EUBFP)<V4L>
	SD-493-07X-010		IC,HD49307(5EUNFH)<V4L>
	SM-C68-MC7-05C		IC,MC68HC705C8ACP<V3L>
	87-002-259-080		IC,uPD6376GS<V3L>
	87-001-607-080		IC,BA4558F<V3L>
	82-NV1-628-080		IC,CXA1645M(5EUBFC)<V3L,V4L>
	SP-D63-210-010		IC,UPD63210GT-E1(5EUNFU)<V4L>
	SS-N74-HCU-04D		IC,SN74HCU04DR<V3L>
	S1-010-XXX-010		IC,UPD61010AGD-LBD(5EULF6)<V4L>
	SC-170-CXX-010		IC,TC170C100AF-001(5EUKFT)<V4L>
	SC-256-KG1-T10		IC,TC514260BJ-70(5EULMD)<V4L>
	SC-000-002-000		IC,TC514260BJ-70(5EULMD)<V4L>
	SL-C29-32X-010		IC,TLC2932IPW(5EUNFT)<V4L>
	87-017-745-019		IC,CXA1782BQ<EXCEPT V5,WR>
	87-002-783-110		IC,CXD2500BQ<EXCEPT WR>
	87-A20-257-049		IC,BA6791FP<V5>
	87-070-120-049		IC,BA6897 FP<EXCEPT V5,WR>
	87-070-429-019		IC,NJM2244L<EXCEPT V5,WR>
	87-002-532-019		IC,PQ05RF11<V5>
	87-017-825-019		IC,GP1F32T<D,V5>
	87-001-873-019		IC,LB1644<V5>
	84-ZG1-639-010		C-IC,MB89627<V5>
	ST-C74-HC2-570		IC,TC74HC257<V3L>
	83-NFT-618-010		IC,UPD78044BGF<V3L>
	85-MAR-614-010		IC,UPD78044BGF-025<V4L>
	87-070-430-019		IC,LA6530<EXCEPT V5,WR>
	87-017-543-089		IC,PST 600D<V5>
	87-A20-255-049		C-IC,SN74LV373NS<V5>
	87-A20-251-049		C-IC,BR6265BF-N10SL<V5>
	87-A20-252-049		C-IC,SN74LV00NS<V5>
	87-A20-253-049		C-IC,SN74LV04NS<V5>
	87-A20-254-049		C-IC,SN74LV32NS<V5>
	87-A20-244-010		C-IC,CL484<V5>
	87-020-881-089		IC,NJM78L05A<EXCEPT V5,WR>
	87-A20-200-040		C-IC,HM514260CJ7/CLJ7<V5>
	87-017-888-089		IC,NJM4558MD<V4L>
	84-ZG1-640-049		C-IC,LH5317<V5>
	87-A20-256-049		C-IC,PQ20VZ5U<V5>
	87-A20-247-019		C-IC,BU1417AK<V5>
	87-017-802-010		IC,LC7872E<G>
	87-A20-248-049		C-IC,BU2173F<V5>
	87-017-803-010		IC,LC32464P-80<G>
	87-A20-258-040		C-IC,SM5877AM<V5>
TRANSISTOR			
	SC-408-1XX-010		TR,2SC4081(5EQQ2S)<V4L>
	S1-441-XXX-010		TR,RN1441-A(5EQQRN)<V4L>
	SA-157-6XX-010		TR,2SA1576(5EQQ2S)<V4L>
	89-111-625-089		C-TR,2SA1162GR<EXCEPT V5,WR>
	87-026-237-089		C-TR,DTC124XK<EXCEPT WR>
	87-327-125-089		C-TR,2SC2712 GR<V5>
	89-113-625-089		C-TR 2SA 1362 GR(TAPG)<V5>
	89-327-125-089		C-TR,2SC2712GR<EXCEPT WR>
	89-112-965-089		TR,2SA1296GR<EXCEPT WR>
	87-026-608-089		C-TR,DTC 123 JK<F>
	89-324-585-010		TR,2SC2458<V3L>
	89-333-266-089		C-TR,2SC3326B<EXCEPT V5,WR>
	87-026-580-089		C-TR,DTA123JK<EXCEPT WR>
	87-026-470-089		TR,HN1C03 F B<V5>
	89-318-155-089		TR,2SC1815 GR<V5>
DIODE			
	S0-041-480-000		DIODE,1N4148<V3L>
	S1-305-700-283		DIODE,DA115(5EDQDD)<V4L>
	S0-240-010-000		DIODE,1N4001<V3L>
	SA-P20-2UX-010		DIODE,DAP202U(5EDQDD)<V4L>
	87-002-608-089		DIODE,DSF10TC<V4L>
	87-017-430-090		DIODE,RK14<V3L>
	87-020-465-089		DIODE,ISS133<EXCEPT V5,WR>
	SM-TZ2-7B0-000		ZENER,MTZ2.7B<V3L>
	87-020-027-089		C-DIODE 1SS184<V5>
	87-A40-180-049		C-DIODE SB07-015 C<V5>
	87-A40-196-089		C-ZENER UDZ6.2 B<V5>
MAIN VCD C.B<V3L,V4L>			
C101	87-012-140-089		C-CAP,S 470P-50 CH<EXCEPT WR>
C102	87-010-194-089		C-CAP,S 0.047-25 F
C103	87-010-178-089		C-CAP,S 1000P-50 B
C104	87-012-156-089		C-CAP,S 220P-50 CH
C105	87-010-384-089		CAP,E 100-25 SME
C106	87-010-196-089		C-CAP,S 0.1-25 F
C107	87-010-314-089		C-CAP,S 22P-50 CH
C108	87-010-314-089		C-CAP,S 22P-50 CH
C110	87-010-221-089		CAP,E 470-10 11L
C111	87-010-320-089		C-CAP,S 68P-50 CH
C112	87-010-196-089		C-CAP,S 0.1-25 F<V4L>
C112	87-016-463-089		C-CAP,S 0.33-16 B<V3L>
C113	87-010-260-089		CAP,E 47-25 SME
C114	87-010-498-049		CAP,E 10-16 GAS
C115	87-010-498-049		CAP,E 10-16 GAS<G>
C116	87-010-196-089		C-CAP,S 0.1-25 F
C117	87-010-197-089		C-CAP,S 0.01-25 B
C118	87-010-553-049		CAP,E 47-16 GAS<V4L>
C119	87-010-553-049		CAP,E 47-16 GAS
C120	87-010-197-089		C-CAP,S 0.01-25 B
C121	87-010-384-089		CAP,E 100-25 SME<V4L>
C122	87-010-320-089		C-CAP,S 68P-50 CH<D>
C123	87-010-401-089		CAP,E 1-50 SME
C124	87-A10-011-019		CAP,E 2200-25 SMG
C125	87-010-322-089		C-CAP,S 100P-50 CH
C126	87-010-178-089		C-CAP,S 1000P-50 B
C127	87-010-314-089		C-CAP,S 22P-50 CH<G>
C128	87-010-320-089		C-CAP,S 68P-50 CH
C129	87-010-263-089		CAP,E 100-10 SME<D>
C130	87-010-197-089		C-CAP,S 0.01-25 B<D>
C131	87-010-197-089		C-CAP,S 0.01-25 B
C132	87-010-196-089		C-CAP,S 0.1-25 F
C133	87-010-196-089		C-CAP,S 0.1-25 F
C134	87-010-196-089		C-CAP,S 0.1-25 F
C135	87-010-196-089		C-CAP,S 0.1-25 F
C136	87-010-154-089		C-CAP,S 10P-50 CH<V4L>
C201	87-010-382-089		CAP,E 22-25 SME
C202	87-010-197-089		C-CAP,S 0.01-25 B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C203	87-010-382-089		CAP,E 22-25 SME
C204	87-010-381-089		CAP,E 330-16 SME
C205	87-010-196-089		C-CAP,S 0.1-25 F
C206	87-010-196-089		C-CAP,S 0.1-25 F
C207	87-010-498-049		CAP,E 10-16 GAS<F>
C208	87-010-405-089		CAP,E 10-50 SME
C301	87-010-197-089		C-CAP,S 0.01-25 B
C306	87-010-381-089		CAP,E 330-16 SME<V4L>
C307	87-010-553-049		CAP,E 47-16 GAS
C308	87-010-498-049		CAP,E 10-16 GAS
C309	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C310	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C311	87-012-140-089		C-CAP,S 470P-50 CH<V4L>
C312	87-012-140-089		C-CAP,S 470P-50 CH<V4L>
C313	87-010-384-089		CAP,E 100-25 SME<V4L>
C315	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C316	87-010-404-089		CAP,E 4.7-50 SME<V4L>
C317	87-010-197-089		C-CAP,S 0.01-25 B
C318	87-010-197-089		C-CAP,S 0.01-25 B
C401	87-010-405-089		CAP,E 10-50 SME<G>
C402	87-010-314-089		C-CAP,S 22P-50 CH<G>
C403	87-010-315-089		C-CAP,S 27P-50 CH<G>
C406	87-010-384-089		CAP,E 100-25 SME<G>
C407	87-010-384-089		CAP,E 100-25 SME<G>
C408	87-010-196-089		C-CAP,S 0.1-25 F<G>
C409	87-010-196-089		C-CAP,S 0.1-25 F<G>
CON6	83-NFT-628-019		CONN ASSY,8P<V3L>
EM101	87-008-474-089		F-BEAD,EMI BL02RN1
EM102	87-008-474-089		F-BEAD,EMI BL02RN1
FC1	85-NFT-612-019		FF-CABLE,30P-1.0<V4L>
FC2	88-912-131-219		FF-CABLE,12P 1.25
FC3	85-MAR-617-019		FF-CABLE,6P-1.25
J101	87-009-502-019		JACK,PIN 1PY EARTH
L101	87-003-149-089		COIL,47UH
L102	87-003-149-089		COIL,47UH
L103	87-003-143-089		COIL,4.7UH
L401	87-003-149-089		COIL,47UH<G>
L402	87-003-149-089		COIL,47UH<G>
M401	87-045-305-019		MOTOR, RF-500TB
PR101	87-026-689-089		PROTECTOR,1A 60V 491
SW201	87-036-109-019		SW,PUSH SPPB 61
SW202	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-270-089		VIB,XTAL 16.9344MHZ
X201	89-MX1-704-089		CERA LOCK(MU)3.9MHZ
X401	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>

MAIN VCD C.B<V5>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C101	87-010-197-089		C-CAP,S 0.01-25 B
C102	87-010-550-049		CAP,E 100-6.3 GAS
C103	87-010-318-089		C-CAP,S 47P-50 CH
C104	87-010-197-089		C-CAP,S 0.01-25 B
C105	87-010-318-089		C-CAP,S 47P-50 CH
C106	87-010-549-049		CAP,E 47-6.3 GAS
C107	87-012-156-089		C-CAP,S 220P-50 CH
C108	87-010-184-089		C-CAP,S 3300P-50 B
C109	87-010-194-089		C-CAP,S 0.047-25 F
C110	87-012-140-089		C-CAP,S 470P-50 CH
C111	87-010-197-089		C-CAP,S 0.01-25 B
C112	87-016-461-089		C-CAP,S 0.47-16 F
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-550-049		CAP,E 100-6.3 GAS
C115	87-010-197-089		C-CAP,S 0.01-25 B
C116	87-010-561-049		CAP,E 100-16 GAS
C117	87-010-562-049		CAP,E 220-10 GAS
C118	87-010-553-049		CAP,E 47-16 GAS
C119	87-010-197-089		C-CAP,S 0.01-25 B
C120	87-010-555-089		CAP,E 100-10 GAS
C121	87-010-197-089		C-CAP,S 0.01-25 B
C201	87-010-499-049		CAP,E 22-6.3 GAS
C202	87-010-197-089		C-CAP,S 0.01-25 B
C203	87-010-196-089		C-CAP,S 0.1-25 F
C204	87-010-316-089		C-CAP,S 33P-50 CH
C205	87-010-316-089		C-CAP,S 33P-50 CH
C206	87-010-499-049		CAP,E 22-6.3 GAS
C207	87-010-197-089		C-CAP,S 0.01-25 B
C208	87-010-197-089		C-CAP,S 0.01-25 B
C209	87-010-197-089		C-CAP,S 0.01-25 B
C210	87-010-197-089		C-CAP,S 0.01-25 B
C211	87-010-197-089		C-CAP,S 0.01-25 B
C212	87-010-318-089		C-CAP,S 47P-50 CH
C301	87-010-549-049		CAP,E 47-6.3 GAS
C302	87-010-549-049		CAP,E 47-6.3 GAS
C304	87-010-197-089		C-CAP,S 0.01-25 B
C305	87-010-197-089		C-CAP,S 0.01-25 B
C306	87-010-197-089		C-CAP,S 0.01-25 B
C307	87-010-197-089		C-CAP,S 0.01-25 B
C308	87-010-197-089		C-CAP,S 0.01-25 B
C309	87-010-197-089		C-CAP,S 0.01-25 B
C310	87-010-197-089		C-CAP,S 0.01-25 B
C311	87-010-197-089		C-CAP,S 0.01-25 B
C312	87-010-197-089		C-CAP,S 0.01-25 B
C313	87-010-318-089		C-CAP,S 47P-50 CH
C314	87-010-196-089		C-CAP,S 0.1-25 F
C315	87-010-196-089		C-CAP,S 0.1-25 F
C316	87-010-549-049		CAP,E 47-6.3 GAS
C317	87-010-314-089		C-CAP,S 22P-50 CH
C319	87-010-314-089		C-CAP,S 22P-50 CH
C320	87-010-196-089		C-CAP,S 0.1-25 F
C321	87-010-550-049		CAP,E 100-6.3 GAS
C322	87-010-197-089		C-CAP,S 0.01-25 B
C323	87-010-550-049		CAP,E 100-6.3 GAS
C324	87-010-197-089		C-CAP,S 0.01-25 B
C401	87-010-197-089		C-CAP,S 0.01-25 B
C402	87-010-550-049		CAP,E 100-6.3 GAS
C403	87-010-197-089		C-CAP,S 0.01-25 B
C404	87-012-140-089		C-CAP,S 470P-50 CH
C405	87-010-322-089		C-CAP,S 100P-50 CH
C406	87-012-140-089		C-CAP,S 470P-50 CH
C407	87-016-350-049		CAP,E 470-4 MA GAS
C408	87-010-196-089		C-CAP,S 0.1-25 F
C409	87-010-197-089		C-CAP,S 0.01-25 B
C410	87-010-197-089		C-CAP,S 0.01-25 B
C411	87-010-550-049		CAP,E 100-6.3 GAS
C412	87-010-197-089		C-CAP,S 0.01-25 B
C413	87-010-314-089		C-CAP,S 22P-50 CH
C414	87-010-316-089		C-CAP,S 33P-50 CH
C415	87-010-499-049		CAP,E 22-6.3 GAS
C416	87-010-197-089		C-CAP,S 0.01-25 B
C418	87-010-197-089		C-CAP,S 0.01-25 B
C420	87-010-196-089		C-CAP,S 0.1-25 F
C421	87-012-140-089		C-CAP,S 470P-50 CH
C422	87-010-184-089		C-CAP,S 3300P-50 B
C422	87-010-184-089		C-CAP,S 3300P-50 B
C423	87-010-175-089		C-CAP,S 560P-50 SL
C424	87-010-317-089		C-CAP,S 39P-50 CH
C425	87-012-140-089		C-CAP,S 470P-50 CH
C501	87-010-549-049		CAP,E 47-6.3 GAS
C502	87-010-196-089		C-CAP,S 0.1-25 F
C503	87-010-318-089		C-CAP,S 47P-50 CH
C505	87-010-313-089		C-CAP,S 18P-50 CH
C506	87-010-313-089		C-CAP,S 18P-50 CH
C507	87-010-197-089		C-CAP,S 0.01-25 B
C508	87-010-178-089		C-CAP,S 1000P-50 B
C509	87-010-178-089		C-CAP,S 1000P-50 B
C510	87-010-178-089		C-CAP,S 1000P-50 B
C511	87-010-178-089		C-CAP,S 1000P-50 B
C512	87-010-498-049		CAP,E 10-16 GAS
C513	87-010-498-049		CAP,E 10-16 GAS
C514	87-010-318-089		C-CAP,S 47P-50 CH
C515	87-010-318-089		C-CAP,S 47P-50 CH
C516	87-010-196-089		C-CAP,S 0.1-25 F
C599	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-561-049		CAP,E 100-16 5L
C602	87-010-432-049		CAP,E 10-16 OS

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C603	87-010-196-089		C-CAP,S 0.1-25 F
C604	87-010-196-089		C-CAP,S 0.1-25 F
C605	87-A10-222-049		CAP,E 22-10 OS
C606	87-010-196-089		C-CAP,S 0.1-25 F
C607	87-012-140-089		C-CAP,S 470P-50 CH
C608	87-010-196-089		C-CAP,S 0.1-25 F
J401	87-009-502-019		JACK,PIN 1PY EARTH
L101	87-005-781-089		C-COIL,47UH FLC32C
L201	87-005-781-089		C-COIL,47UH FLC32C
L202	87-005-781-089		C-COIL,47UH FLC32C
L301	87-005-781-089		C-COIL,47UH FLC32C
L302	87-005-781-089		C-COIL,47UH FLC32C
L303	87-005-781-089		C-COIL,47UH FLC32C
L401	87-005-196-089		COIL,10UH
L402	87-005-781-089		C-COIL,47UH FLC32C
L404	87-005-190-089		COIL,3.3UH
L405	87-005-189-089		COIL,2.7UH
L501	87-005-781-089		C-COIL,47UH FLC32C
L601	87-005-469-089		COIL,4.7UH
L602	87-A50-095-019		COIL,68UH
M201	87-045-305-019		MOTOR, RF-500TB
S101	87-036-109-019		SW,PUSH SPPB 61
S102	87-036-109-019		SW,PUSH SPPB 61
S201	87-A90-162-019		SW,SL 1-1-3 SSSU
X201	87-A70-027-089		VIB,XTAL 8MHZ 100PPM
X401	87-A70-026-089		VIB,XTAL 13.5MHZ 50PPM
X501	87-030-270-089		VIB,XTAL 16.9344MHZ

CD MECHA C.B<V3L,V4L,V5>

C101	87-010-154-089		C-CAP,S 10P-50 CH<EXCEPT V5>
C101	87-010-334-080		C-CAP,S 12P-50 CH<V5>
C102	87-010-193-089		C-CAP,S 0.033-25 F<V5>
C102	87-010-184-089		C-CAP,S 3300P-50 B<EXCEPT V5>
C103	87-010-197-089		C-CAP,S 0.01-25 B<EXCEPT V5>
C103	87-010-993-089		C-CAP,S 0.056-25<V5>
C104	87-010-193-089		C-CAP,S 0.033-25 F<EXCEPT V5>
C104	87-010-993-089		C-CAP,S 0.056-25<V5>
C105	87-010-197-089		C-CAP,S 0.01-25 B
C107	87-010-197-089		C-CAP,S 0.01-25 B<V5>
C107	87-010-182-089		C-CAP,S 2200P-50 B<EXCEPT V5>
C108	87-010-805-089		C-CAP,S 1-16F
C109	87-010-322-089		C-CAP,S 100P-50 CH
C110	87-010-198-089		C-CAP,S 0.022-25 B<EXCEPT V5>
C110	87-010-993-089		C-CAP,S 0.056-25<V5>
C111	87-010-551-089		CAP ELECT 33-10V SRE<EXCEPT V5>
C111	87-010-499-049		CAP,E 22-6.3 GAS<V5>
C112	87-010-322-089		C-CAP,S 100P-50 CH
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-197-089		C-CAP,S 0.01-25 B
C115	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C115	87-012-141-089		C-CAP,S 0.22-16 F<V5>
C116	87-010-182-089		C-CAP,S 2200P-50 B
C117	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C117	87-012-141-089		C-CAP,S 0.22-16 F<V5>
C118	87-010-196-089		C-CAP,S 0.1-25 F
C119	87-010-193-089		C-CAP,S 0.033-25 F<V5>
C119	87-010-196-089		C-CAP,S 0.1-25 F<EXCEPT V5>
C120	87-010-549-089		CAP ELECT 47-6.3V
C121	87-010-549-089		CAP ELECT 47-6.3V
C122	87-010-495-089		CAP,E 2.2-35 5L<V5>
C122	87-010-497-089		CAP,E 4.7-35 5L<EXCEPT V5>
C123	87-010-549-089		CAP ELECT 47-6.3V
C125	87-010-553-089		CAP,E 47-16
C127	87-010-553-089		CAP,E 47-16
C127	87-010-549-089		CAP,E 47-6.3 GAS
C128	87-010-549-089		CAP ELECT 47-6.3V
C129	87-010-182-089		C-CAP,S 2200P-50 B
C131	87-010-196-089		C-CAP,S 0.1-25 F
C133	87-010-196-089		C-CAP,S 0.1-25 F
C134	87-010-196-089		C-CAP,S 0.1-25 F
C135	87-010-196-089		C-CAP,S 0.1-25 F
C136	87-010-197-089		C-CAP,S 0.01-25 B
C137	87-010-805-089		C-CAP,S 1-16F
C138	87-010-178-089		C-CAP,S 1000P-50 B
C140	87-010-805-089		C-CAP,S 1-16F<EXCEPT V5>
FC4	85-NFT-611-119		FF-CABLE,16P-1.0
M101	87-045-356-019		MOT,RF-310T A 30
M102	87-045-358-019		MOT,RF-310T A 43
R140	87-022-364-089		C-RES,S82K-1/10WF
R141	87-022-363-089		C-RES,S 68K-1/10W F
R142	87-022-363-089		C-RES,S 68K-1/10W F
R143	87-022-363-089		C-RES,S 68K-1/10W F
R144	87-022-363-089		C-RES,S 68K-1/10W F
R145	87-022-364-089		C-RES,S82K-1/10WF
SFR101	87-024-175-089		SFR,47K DIA6 V
SFR102	87-024-176-089		SFR,100K DIA6 V
SFR103	87-024-175-089		SFR,47K DIA6 V
SW101	87-036-340-019		SW,LEAF LSA-1121

T-T C.B

C401	87-018-214-089		CAP TC U 0.1-50 F
FC401	84-ZG1-614-119		CABLE FFC 5P-1.25
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V

LED C.B<F>

LED101	87-070-200-089		LED,SLP636C-81-S-T1<F>
LED102	87-017-350-080		LED,SEL1550CM<F>
LED103	87-017-350-080		LED,SEL1550CM<F>
LED104	87-070-200-089		LED,SLP636C-81-S-T1<F>

VCD C.B<V3L>

C2	87-010-378-010		CAP,E 10-16
C3	87-010-378-010		CAP,E 10-16
C4	87-010-374-010		CAP,E 47-10
C5	87-010-374-010		CAP,E 47-10
C9	87-010-378-010		CAP,E 10-16
C10	87-010-378-010		CAP,E 10-16
C11	87-010-378-010		CAP,E 10-16
C12	87-010-374-010		CAP,E 47-10
C13	87-010-378-010		CAP,E 10-16
C17	87-010-248-010		CAP,E 220-10
C22	87-010-374-010		CAP,E 47-10
C23	87-010-374-010		CAP,E 47-10
C32	87-010-378-010.		CAP,E 10-16
C47	87-010-248-010		CAP,E 220-10
C49	87-010-378-010		CAP,E 10-16
C52	87-010-248-010		CAP,E 220-10
C101	87-010-378-010		CAP,E 10-16
L1	SL-AL0-4NA-100		COIL,10UH
L2	SL-AL0-4NA-472		COIL,4.7UH
X1	SS-KY4-05M-000		X'TAL,40.5MHz
X2	SS-KY4-M00-000		X'TAL,4MHz
X3	SS-KY4-433-616		X'TAL,4.433616MHz

VCD C.B<V4L>

C13	87-010-367-080		CAP,E 4.7-25V(5ECEC1)
C38	87-010-075-040		CAP,E 10-16V(5ECEC1)
C40	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C44	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C47	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C48	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C51	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C54	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C56	87-010-076-810		CAP,E 22-6.3V(5ECEC0)
C58	87-010-076-810		CAP,E 22-6.3V(5ECEC0)
C81	87-016-155-010		CAP,E 1000-6.3V5ECER0)
C128	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C133	87-010-053-810		CAP,E 1-50V(5ECEC1)
C150	87-010-075-040		CAP,E 10-16V(5ECEC1)

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C151	87-010-549-010		CAP,E 47-6.3V(5ECEC0)
C152	87-016-155-010		CAP,E 1000-6.3V5ECER0)
C157	87-010-075-040		CAP,E 10-16V(5ECEC1)
CT1	S2-130-007-010		CAP,TRIMMER 30PF(5ECT04)
L1	S7-001-XXX-100		C-COIL,47UH(5ELQE4)
X1	S0-120-003-010		X'TAL,12.0000MHZ(5EXMA4)
X2	S0-177-343-010		X'TAL,17.73447MHZ(5EXMA4)

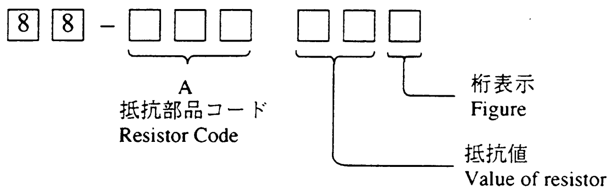
SUB C.B<V3L>

DRIVE C.B<WR>

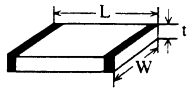
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
M1	87-045-358-019		MOT,RF-310TA 43
M2	87-045-356-019		MOT,RF-310TA 30
SW1	87-A90-042-019		SW,LEAF MSW 17310 MVPO

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding

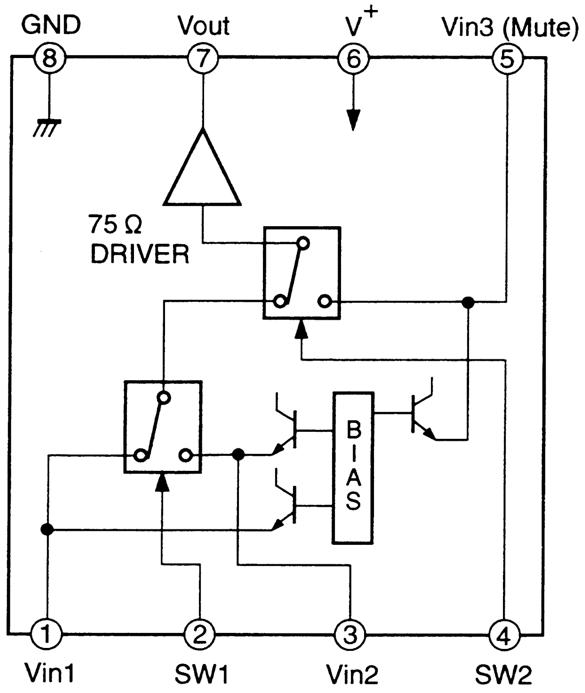

8
8
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗值
Value of resistor

チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード ：A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

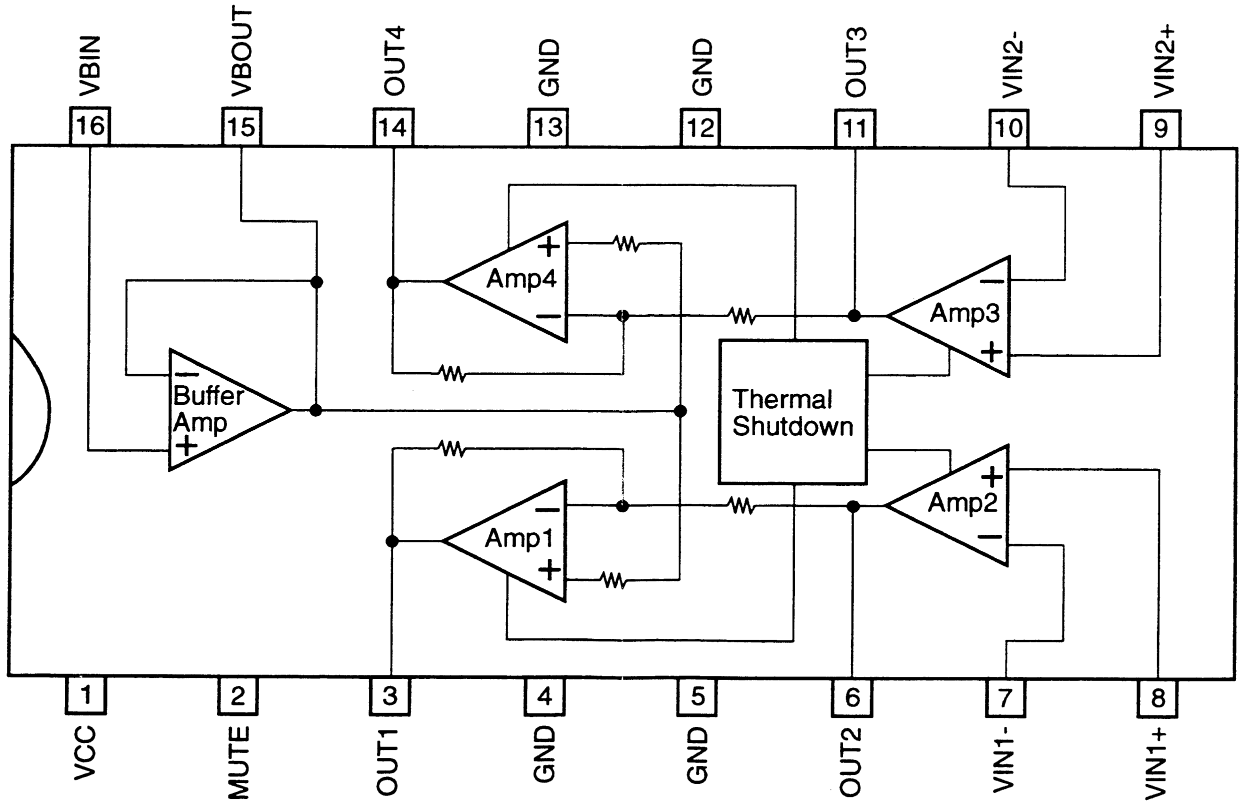
IC BLOCK DIAGRAM

IC, NJM2244L

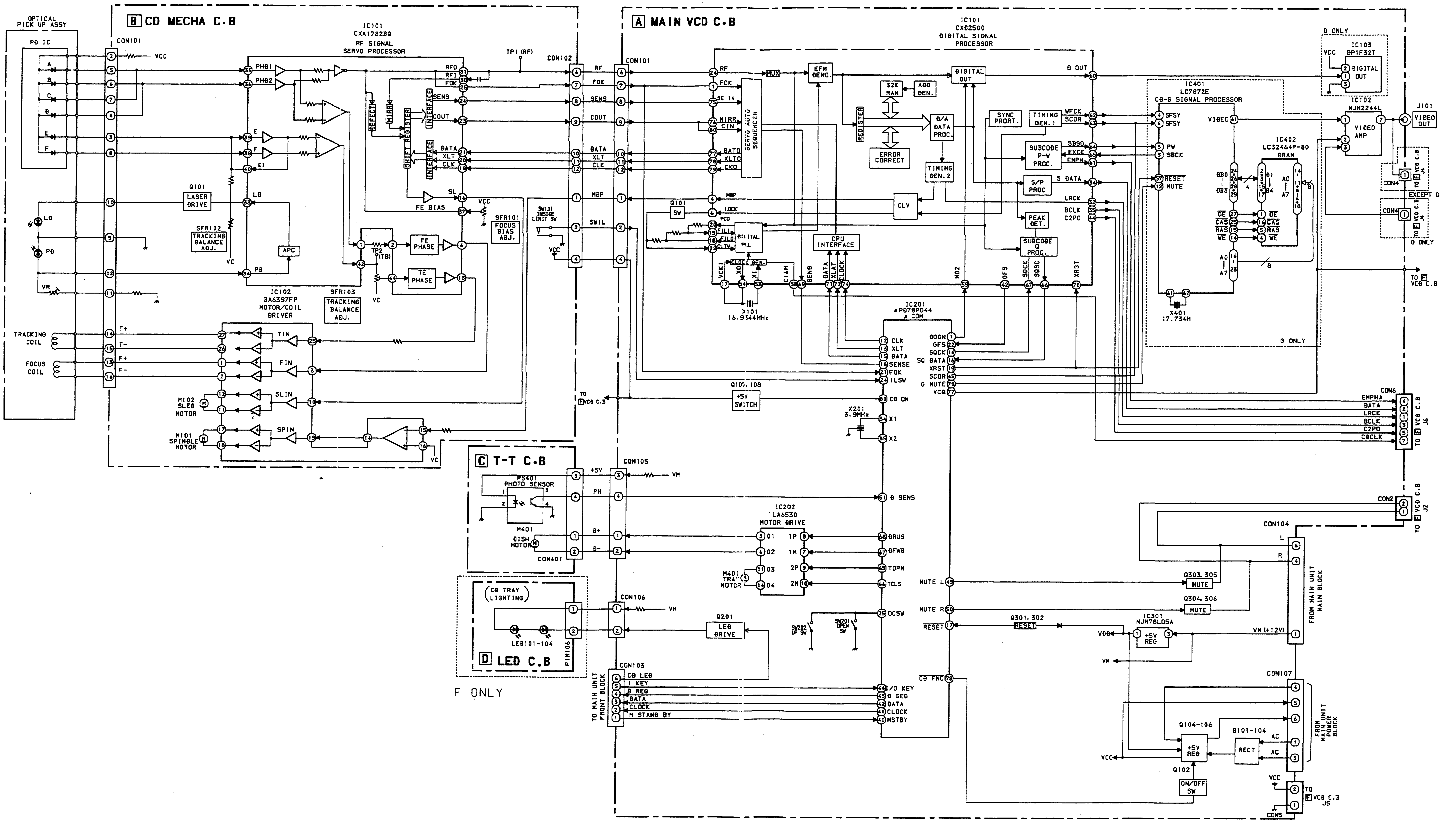

GND
Vout
V+
Vin3 (Mute)
8
7
6
5
75 Ω
DRIVER
B
I
A
S
1
2
3
4
Vin1
SW1
Vin2
SW2

SW1	SW2	OUTPUT SIGNAL
L	L	Vin1
H	L	Vin2
L/H	H	Vin3

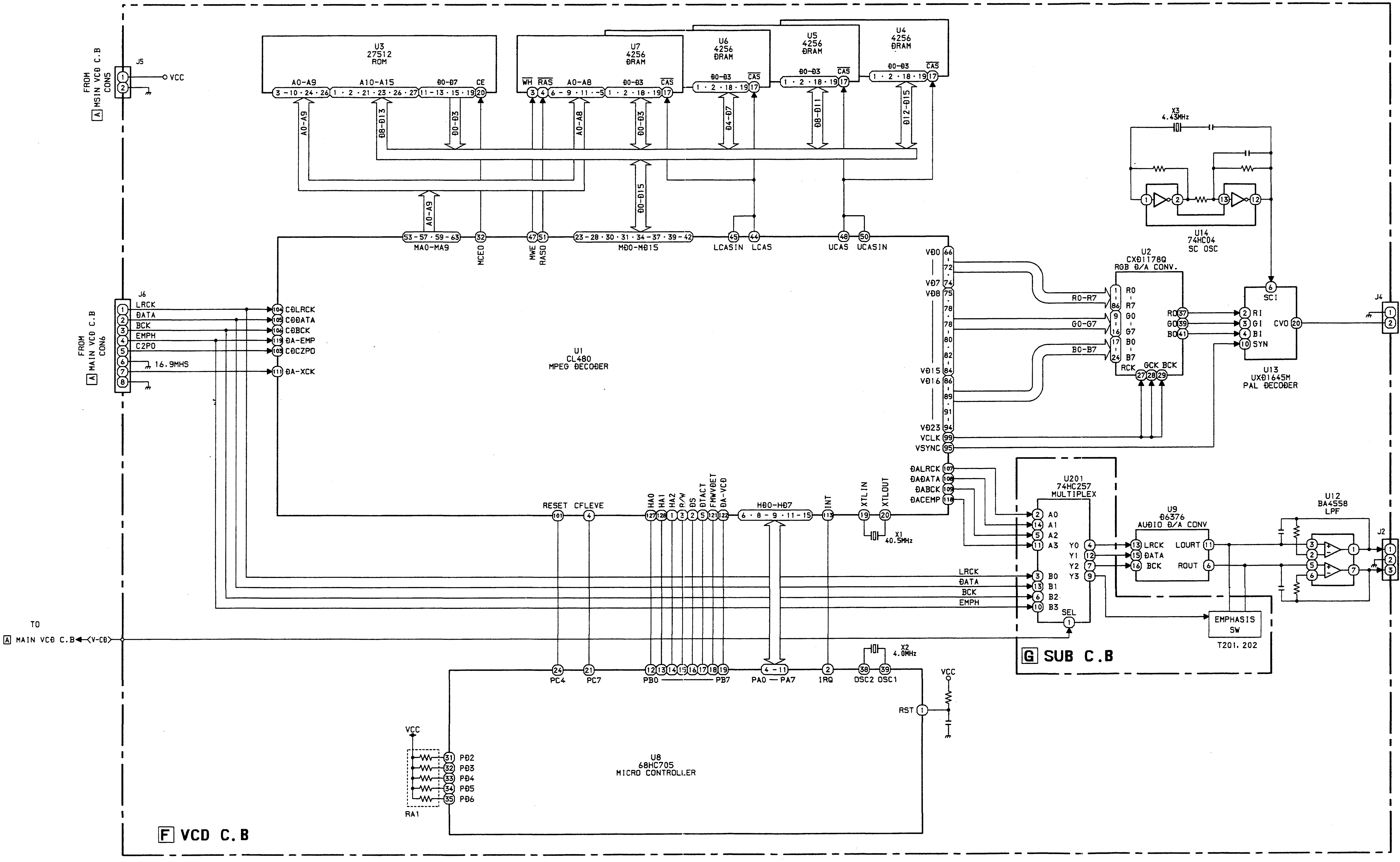
IC, LA6530


VBIN
VBOUT
OUT4
GND
GND
OUT3
VIN2-
VIN2+
16
15
14
13
12
11
10
9
Amp4
Amp3
Buffer
Amp
Thermal
Shutdown
Amp1
Amp2
1
2
3
4
5
6
7
8
VCC
MUTE
OUT1
GND
GND
OUT2
VIN1-
VIN1+

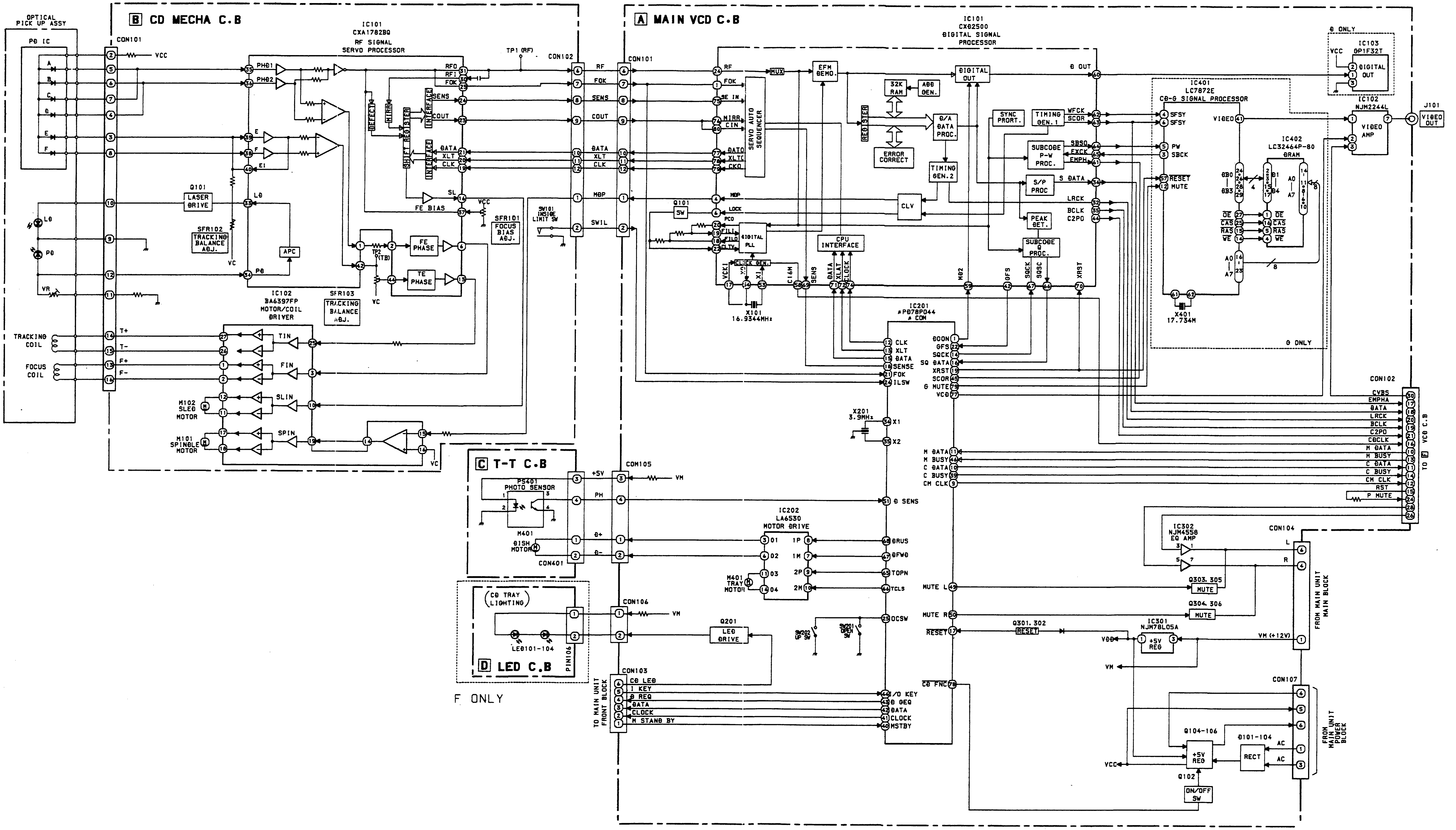
BLOCK DIAGRAM-1 (V3L: MAIN VCD ／ CD MECHA)


OPTICAL PICK UP ASSY
PD IC
LD
PD
VR
TRACKING COIL
FOCUS COIL
B CD MECHA C.B
CON101
VCC
IC101 CXA1782BQ RF SIGNAL SERVO PROCESSOR
TP1 (RF)
CON102
PHD1
PHD2
RFO
RFI
FOK
SENS
COUT
DATA
XLT
CLK
SL
FE BIAS
DEFECT
MIRR
SHIFT REGISTER
INTERFACE
Q101 LASER DRIVE
SFR102 TRACKING BALANCE ADJ.
APC
SFR101 FOCUS BIAS ADJ.
SFR103 TRACKING BALANCE ADJ.
TP2 (TE)
FE PHASE
TE PHASE
IC102 BA6397FP MOTOR/COIL DRIVER
TIN
FIN
SLIN
SPIN
M102 SLED MOTOR
M101 SPINDLE MOTOR
SW101 INSIDE LIMIT SW
MDP
SWIL
TO E VCD C.B
A MAIN VCD C.B
IC101 CXD2500 DIGITAL SIGNAL PROCESSOR
MUX
EFM DEMO.
SERVO AUTO SEQUENCER
32K RAM
ADD GEN.
REGISTER
D/A DATA PROC.
ERROR CORRECT
DIGITAL OUT
D OUT
SYNC PROT.
TIMING GEN.1
TIMING GEN.2
SUBCODE P-W PROC.
S/P PROC
PEAK DET.
SUBCODE Q PROC.
CLV
CPU INTERFACE
DIGITAL PLL
CLOCK GEN.
X101 16.9344MHz
IC201 DPD78P044 COM
Q107, 108 +5V SWITCH
X201 3.9MHz
D SENS
IC202 LA6530 MOTOR DRIVE
M401 TRAY MOTOR
DRUS
DFWD
TOPN
TCLS
OCSW
SW202 UP SW
SW201 OPEN SW
Q201 LED DRIVE
IC401 LC7872E CD-G SIGNAL PROCESSOR
SFSY
PW
SBCK
RESET
MUTE
VIDEO
X401 17.734M
IC402 LC32464P-80 DRAM
D ONLY
IC103 DP1F32T DIGITAL OUT
IC102 NJM2244L VIDEO AMP
J101 VIDEO OUT
CON4 TO E VCD C.B J4
EXCEPT G
G ONLY
TO E VCD C.B
CON6 EMPHA DATA LRCK BCLK C2PO CDCLK TO E VCD C.B J6
CON2 TO E VCD C.B J2
CON104
FROM MAIN UNIT MAIN BLOCK
MUTE L
MUTE R
RESET
Q303, 305 MUTE
Q304, 306 MUTE
Q301, 302 RESET
IC301 NJM78L05A +5V REG
VM (+12V)
VDD
VM
CD FNC
CON107
FROM MAIN UNIT POWER BLOCK
Q104-106 +5V REG
D101-104 RECT
AC
VCC
Q102 ON/OFF SW
TO E VCD C.B J5
CON5
C T-T C.B
PS401 PHOTO SENSOR
M401 DISH MOTOR
CON401
CON105
+5V
PH
D+
D-
(CD TRAY LIGHTING)
LED101-104
D LED C.B
PIN106
CON106
F ONLY
CON103
TO MAIN UNIT FRONT BLOCK
CD LED
I KEY
D REQ
DATA
CLOCK
M STAND BY
I/O KEY
D REQ
MSTBY

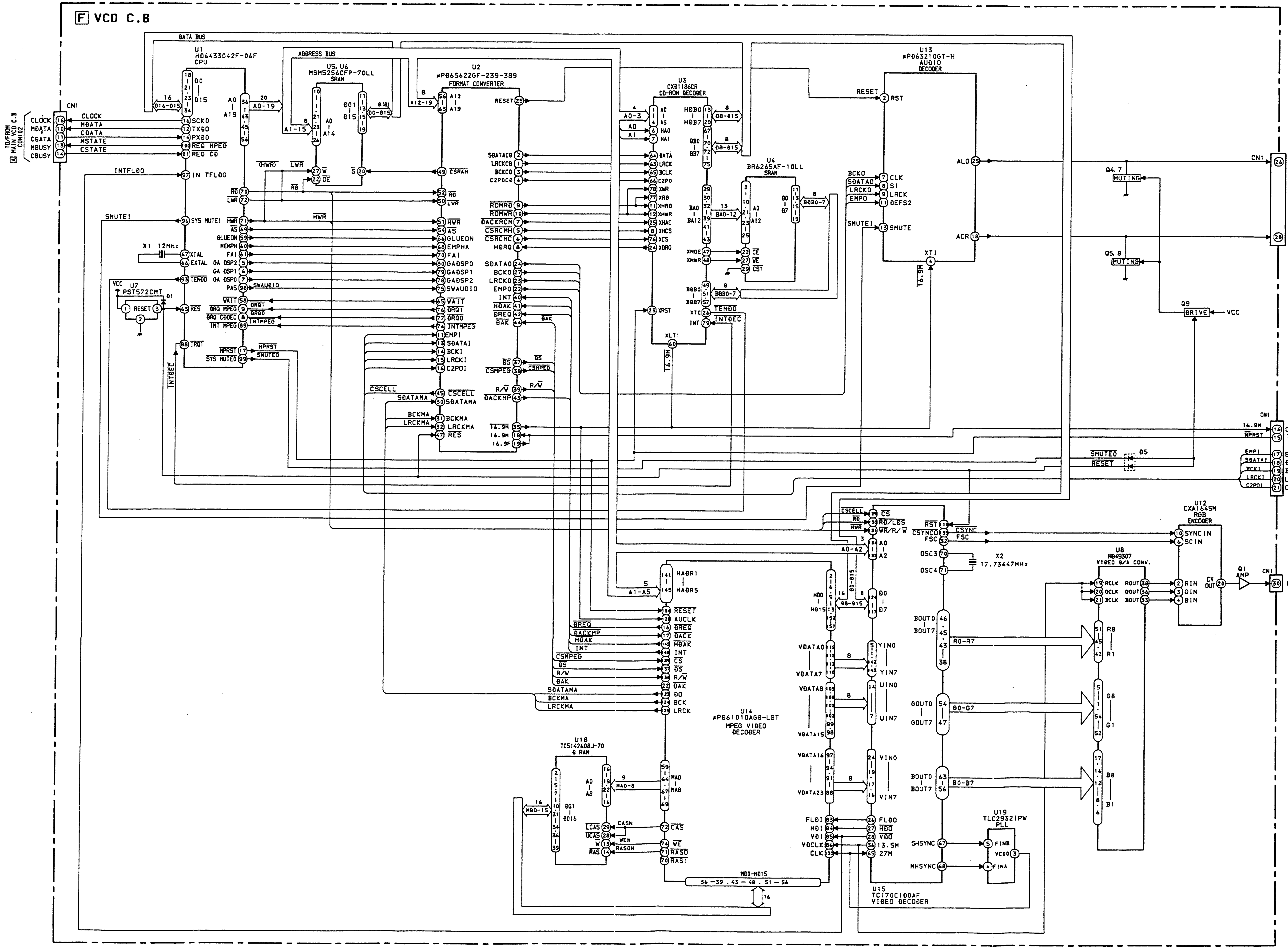
BLOCK DIAGRAM-2 (V3L: VCD)


FROM A MSIN VCD C.B CON5
J5
VCC
U3
27512
ROM
A0-A9
A10-A15
D0-D7
CE
U7
4256
DRAM
WH
RAS
A0-A8
D0-D3
CAS
U6
4256
DRAM
D4-D7
U5
4256
DRAM
D8-D11
U4
4256
DRAM
D12-D15
D8-D13
A0-A9
D0-D15
MA0-MA9
MCED
MWE
RASO
MD0-MD15
LCASIN
LCAS
UCAS
UCASIN
X3
4.43MHz
U14
74HC04
SC OSC
FROM A MAIN VCD C.B CON6
J6
LRCK
DATA
BCK
EMPH
C2PO
16.9MHS
CDLRCK
CDDATA
CDBCK
DA-EMP
CDCZPO
DA-XCK
U1
CL480
MPEG DECODER
VD0
VD7
VD8
VD15
VD16
VD23
VCLK
VSYNC
U2
CXD1178Q
RGB D/A CONV.
R0-R7
G0-G7
B0-B7
R0
R7
G0
G7
B0
B7
RCK
GCK
BCK
U13
UXD1645M
PAL DECODER
SCI
RI
GI
BI
SYN
CVO
J4
TO A MAIN VCD C.B CON4
DALRCK
DADATA
DABCK
DACEMP
U201
74HC257
MULTIPLEX
A0
A1
A2
A3
B0
B1
B2
B3
Y0
Y1
Y2
Y3
SEL
U9
D6376
AUDIO D/A CONV
LRCK
DATA
BCK
LOURT
ROUT
U12
BA4558
LPF
J2
TO A MAIN VCD C.B CON2
EMPHASIS SW
T201, 202
G SUB C.B
RESET
CFLEVE
HA0
HA1
HA2
R/W
DS
DTACT
FMWDET
DA-VCD
HD0-HD7
INT
XTLIN
XTLOUT
X1
40.5MHz
LRCK
DATA
BCK
EMPH
TO A MAIN VCD C.B
V-CD
PC4
PC7
PB0
PB7
PA0 — PA7
IRQ
OSC2
OSC1
X2
4.0MHz
VCC
RST
VCC
PD2
PD3
PD4
PD5
PD6
RA1
U8
68HC705
MICRO CONTROLLER
F VCD C.B

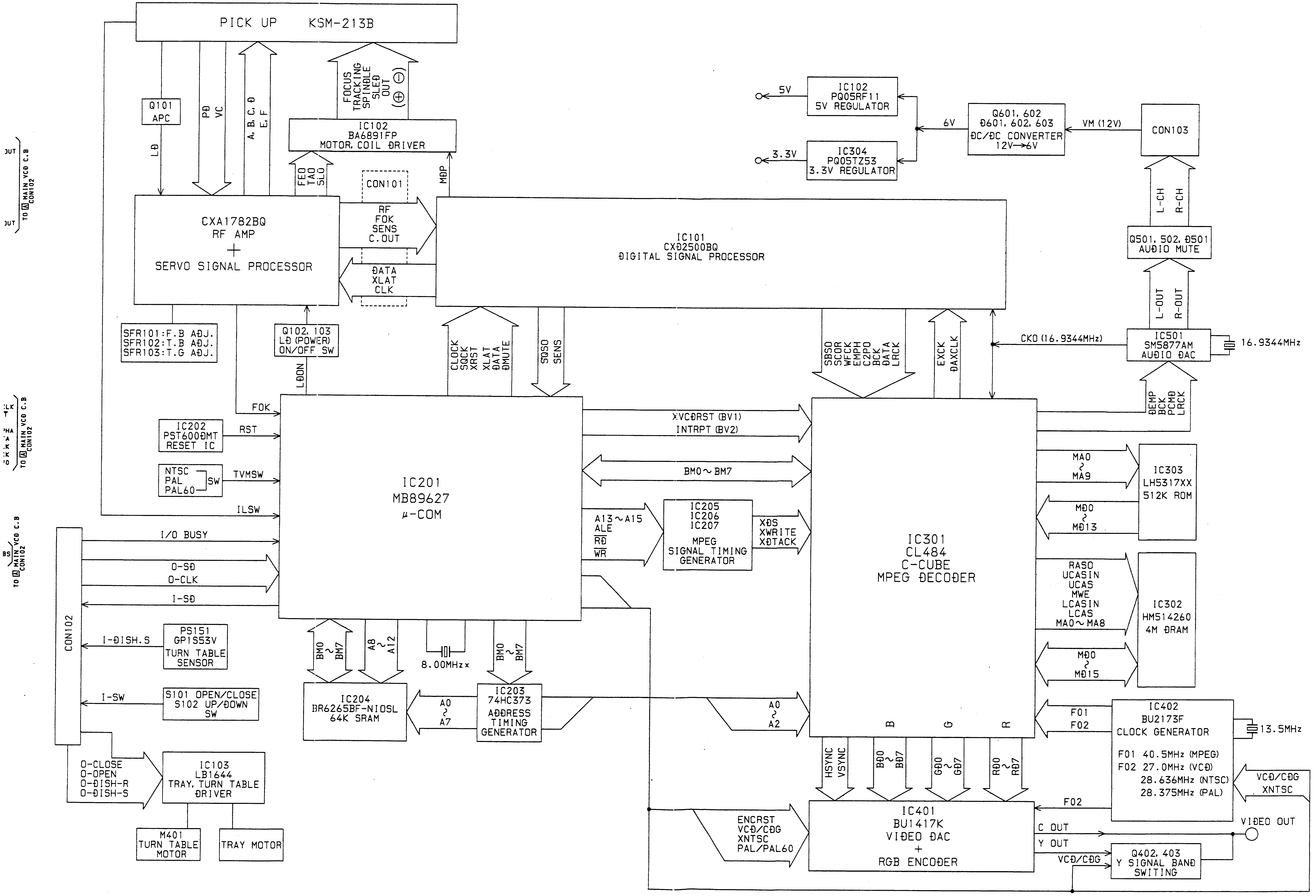
BLOCK DIAGRAM-3 (V4L: MAIN VCD ／ CD MECHA)

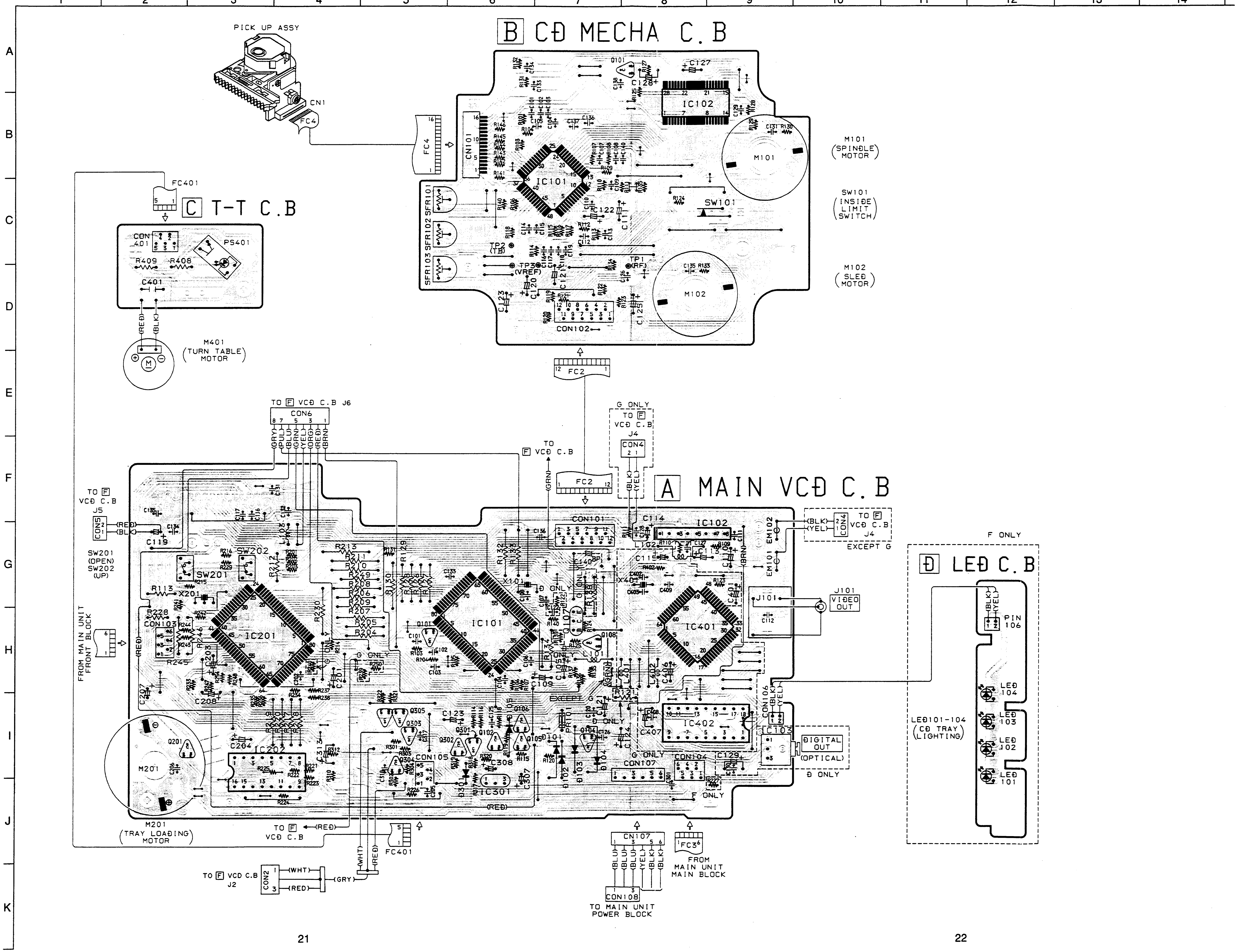

OPTICAL PICK UP ASSY
PD IC
LD
PD
VR
TRACKING COIL
FOCUS COIL
M102 SLED MOTOR
M101 SPINDLE MOTOR
B CD MECHA C.B
CON101
VCC
IC101 CXA1782BQ RF SIGNAL SERVO PROCESSOR
PHD1
PHD2
RFO
RFI
FOK
SENS
COUT
DATA
XLT
CLK
SL
FE BIAS
VCC
SFR101 FOCUS BIAS ADJ.
DEFECT
MIRR
SHIFT REGISTER
INTERFACE
Q101 LASER DRIVE
SFR102 TRACKING BALANCE ADJ.
APC
VC
FE PHASE
TE PHASE
TP2 (TE)
IC102 BA6397FP MOTOR/COIL DRIVER
SFR103 TRACKING BALANCE ADJ.
TIN
FIN
SLIN
SPIN
T+
T-
F+
F-
TP1 (RF)
CON102
SW101 INSIDE LIMIT SW
MDP
SWIL
A MAIN VCD C.B
CON101
IC101 CXD2500 DIGITAL SIGNAL PROCESSOR
MUX
EFM DEMO.
32K RAM
ADD GEN.
ERROR CORRECT
REGISTER
D/A DATA PROC.
TIMING GEN.2
SERVO AUTO SEQUENCER
DIGITAL OUT
D OUT
SYNC PROTECT.
TIMING GEN.1
WFCK
SCOR
SUBCODE P-W PROC.
SBSO
EXCK
EMPH
S/P PROC
S DATA
PEAK DET.
LRCK
BCLK
C2PO
SUBCODE Q PROC.
CLV
Q101 SW
LOCK
PCO
FILO
FILI
CLTV
DIGITAL PLL
CLOCK GEN.
CPU INTERFACE
VCKI
XI
C16M
SENS
DATA
XLAT
CLOCK
MDS
GFS
SQCK
SQSO
XRST
X101 16.9344MHz
IC201 μPD78P044 μ COM
DOON
GFS
SQCK
SQ DATA
XRST
SCOR
G MUTE
VCO
CLK
XLT
DATA
SENSE
FOK
ILSW
X201 3.9MHz
X1
X2
D SENS
M DATA
M BUSY
C DATA
C BUSY
CM CLK
D ONLY
IC103 DP1F32T
DIGITAL OUT
IC401 LC7872E CD-G SIGNAL PROCESSOR
SFSY
PW
SBCK
RESET
MUTE
VIDEO
X401 17.734M
IC402 LC32464P-80 DRAM
IC102 NJM2244L VIDEO AMP
J101 VIDEO OUT
CON102
CVBS
EMPHA
DATA
LRCK
BCLK
C2PO
CDCLK
M DATA
M BUSY
C DATA
C BUSY
CM CLK
RST
P MUTE
TO E VCD C.B
C T-T C.B
PS401 PHOTO SENSOR
M401 DISH MOTOR
CON401
CON105
+5V
PH
D+
D-
VM
IC202 LA6530 MOTOR DRIVE
M401 TRAY MOTOR
DRUS
DFWD
TOPN
TCLS
OCSW
SW202 UP SW
SW201 OPEN SW
D LED C.B
CD TRAY LIGHTING
LED101-104
PIN106
CON106
Q201 LED DRIVE
F ONLY
CON103
TO MAIN UNIT FRONT BLOCK
CD LED
I KEY
D REQ
DATA
CLOCK
M STAND BY
I/O KEY
D REQ
DATA
CLOCK
MSTBY
CD FNC
MUTE L
MUTE R
RESET
IC302 NJM4558 EQ AMP
Q303, 305 MUTE
Q304, 306 MUTE
Q301, 302 RESET
IC301 NJM78L05A
+5V REG
VDD
VM (+12V)
CON104
FROM MAIN UNIT MAIN BLOCK
CON107
Q104-106
D101-104
+5V REG
RECT
AC
Q102
ON/OFF SW
VCC
FROM MAIN UNIT POWER BLOCK

BLOCK DIAGRAM-4 (V4L: VCD)

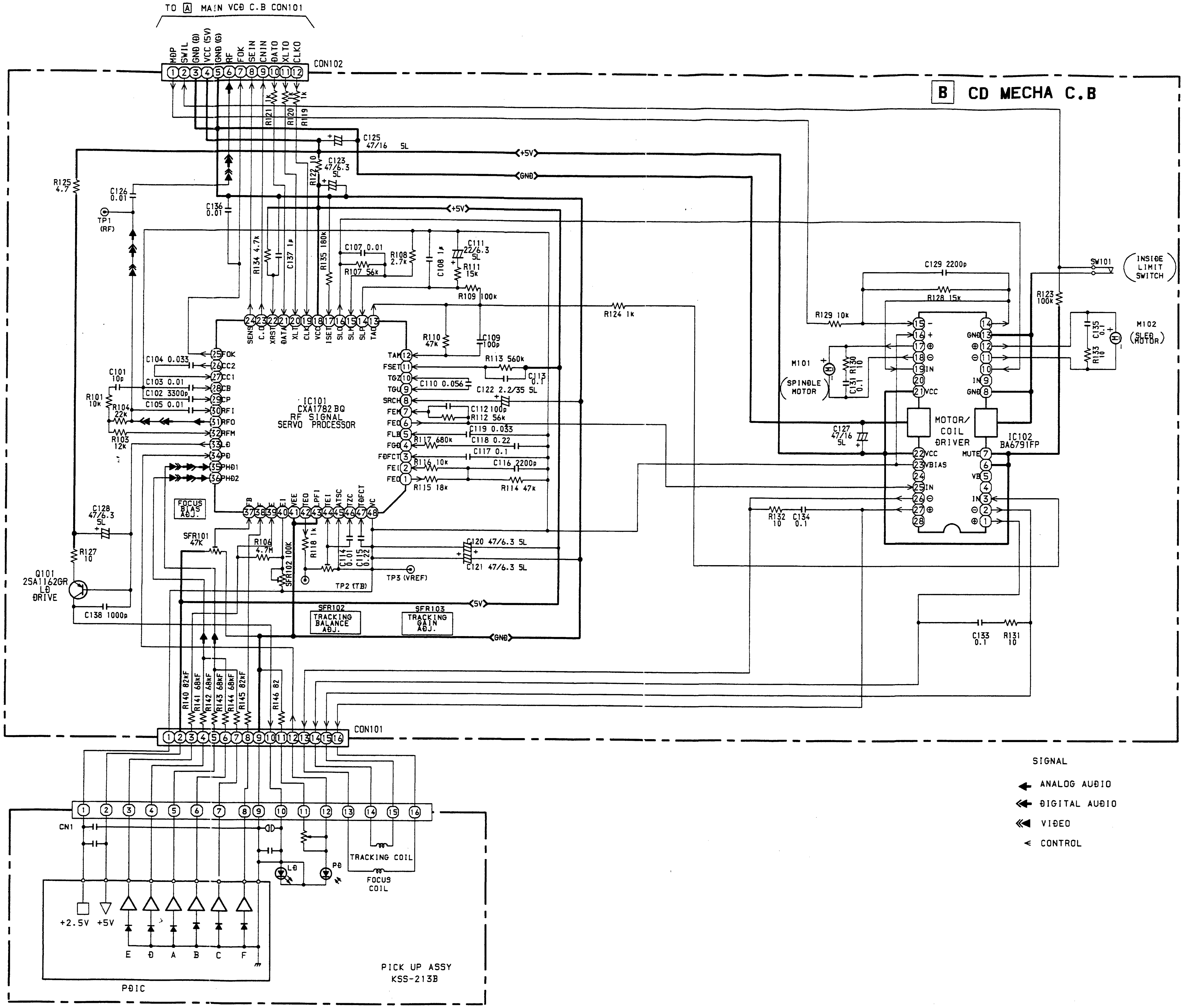

F VCD C.B
DATA BUS
ADDRESS BUS
U1
HD6433042F-06F
CPU
U5, U6
MSM5256CFP-70LL
SRAM
U2
μPD65622GF-239-389
FORMAT CONVERTER
U3
CXD1186CR
CD-ROM DECODER
U4
BR6265AF-10LL
SRAM
U13
μPD63210GT-H
AUDIO DECODER
U7
PST572CMT
RESET
X1 12MHz
TO/FROM A MAIN VCD C.B CON102
CN1
CLOCK
MDATA
CDATA
MSTATE
CSTATE
CBUSY
INTFLDO
SMUTE1
SYS MUTE1
IN TFLDO
SCKO
TXDO
PXDO
REQ MPEG
REQ CD
XTAL
EXTAL
TENDO
RES
IRQT
INTDEC
HWR
AS
GLUEON
EMPHA
FAI
GADSP0
GADSP1
GADSP2
SWAUDIO
WAIT
DRQI
DRQO
INTMPEG
EMPI
SDATAI
BCKI
LRCKI
C2POI
CSCELL
SDATAMA
BCKMA
LRCKMA
RES
RESET
CSRAM
RD
LWR
SDATACD
LRCKCD
BCKCD
C2POCD
ROMRD
ROMWR
DACKRCM
CSRCMH
CSRCMC
HDRQ
SDATAO
BCKO
LRCKO
EMPO
INT
HDAK
DREQ
DAK
DS
CSMPEG
R/W
DACKMP
16.9M
16.9F
HDB0
HDB7
DB0
DB7
XWR
XRD
XHWR
XHAC
XHCS
XCS
XDRQ
XMOE
XMWR
XRST
XTC
INT
XLTI
TENDO
INTDEC
CE
WE
CS1
CLK
SI
LRCK
DEFS2
SMUTE
ALO
ACR
XTI
Q4, 7
MUTING
Q5, 8
MUTING
Q9
DRIVE
VCC
LOUT
ROUT
TO A MAIN VCD C.B CON102
CDCLK
RST
EMPHA
DATA
BCLK
LRCK
C2PO
SMUTEO
D5
U12
CXA1645M
RGB ENCODER
SYNCIN
SCIN
RIN
GIN
BIN
CV OUT
Q1 AMP
CVBS
U8
HB49307
VIDEO D/A CONV.
RCLK
GCLK
BCLK
ROUT
GOUT
BOUT
X2
17.73447MHz
U14
μPD61010AGD-LBT
MPEG VIDEO DECODER
HADR1
HADR5
AUCLK
HDAK
INT
CS
DS
BCK
LRCK
MA0
MA8
CAS
WE
RAS0
RAS1
MD0-MD15
36-39 . 43-48 . 51-56
U18
TC5142608J-70
D RAM
LCAS
UCAS
W
RAS
CASN
WEN
RASON
MD0-15
VDATA0
VDATA7
VDATA8
VDATA15
VDATA16
VDATA23
FLDI
HDI
VDI
VDCLK
CLK
U15
TC170C100AF
VIDEO DECODER
YIN0
YIN7
UIN0
UIN7
VIN0
VIN7
FLDO
HDO
VDO
13.5M
27M
RD/LDS
WR/R/W
A0
A2
CSYNCO
FSC
OSC3
OSC4
BOUT0
BOUT7
GOUT0
GOUT7
R0-R7
G0-G7
B0-B7
SHSYNC
MHSYNC
U19
TLC2932IPW
PLL
FINB
VCOO
FINA
R8
R1
G8
G1
B8
B1
CSYNC

BLOCK DIAGRAM-5 (V5)

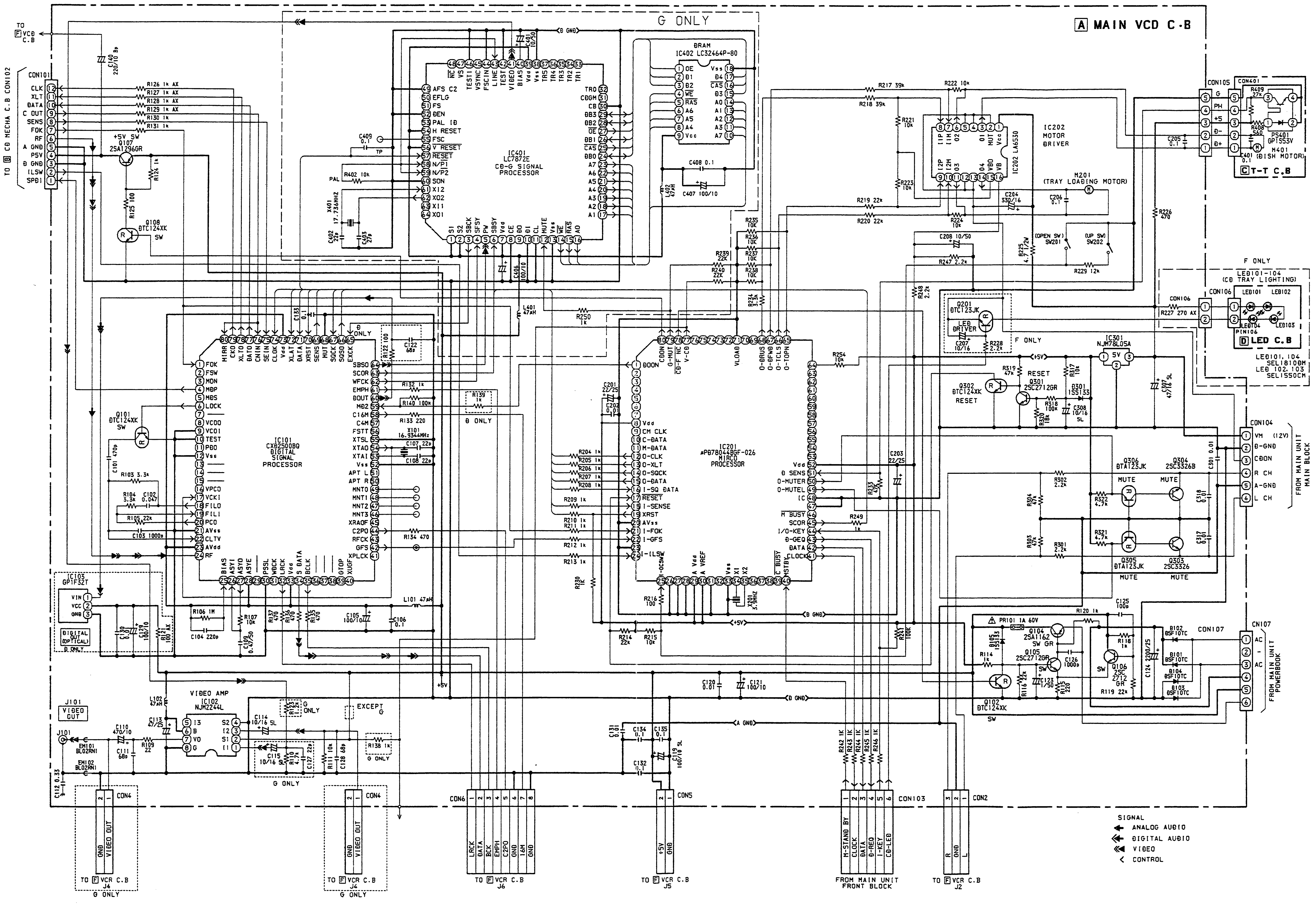

PICK UP KSM-213B
Q101 APC
LD
PD
VC
A, B, C, D
E, F
FOCUS
TRACKING
SPINDLE
SLED
OUT
(⊕ ⊖)
IC102
BA6891FP
MOTOR, COIL DRIVER
FEO
TAO
SLO
CON101
MDP
CXA1782BQ
RF AMP
+
SERVO SIGNAL PROCESSOR
RF
FOK
SENS
C.OUT
DATA
XLAT
CLK
IC101
CXD2500BQ
DIGITAL SIGNAL PROCESSOR
SFR101:F.B ADJ.
SFR102:T.B ADJ.
SFR103:T.G ADJ.
Q102, 103
LD (POWER)
ON/OFF SW
LDON
CLOCK
SQCK
XRST
XLAT
DATA
DMUTE
SQSO
SENS
SBSO
SCOR
WFCK
EMPH
C2PO
BCK
DATA
LRCK
EXCK
DAXCLK
5V
IC102
PQ05RF11
5V REGULATOR
3.3V
IC304
PQ05TZ53
3.3V REGULATOR
6V
Q601, 602
D601, 602, 603
DC/DC CONVERTER
12V→6V
VM (12V)
CON103
L-CH
R-CH
Q501, 502, D501
AUDIO MUTE
L-OUT
R-OUT
CKO (16.9344MHz)
IC501
SM5877AM
AUDIO DAC
16.9344MHz
DEMP
BCK
PCMD
LRCK
FOK
IC202
PST600DMT
RESET IC
RST
NTSC
PAL
PAL60
SW
TVMSW
ILSW
IC201
MB89627
μ-COM
XVCDRST (BV1)
INTRPT (BV2)
BM0～BM7
A13～A15
ALE
RD
WR
IC205
IC206
IC207
MPEG
SIGNAL TIMING
GENERATOR
XDS
XWRITE
XDTACK
IC301
CL484
C-CUBE
MPEG DECODER
MA0
～
MA9
IC303
LH5317XX
512K ROM
MD0
～
MD13
RASO
UCASIN
UCAS
MWE
LCASIN
LCAS
MA0～MA8
IC302
HM514260
4M DRAM
MD0
～
MD15
CON102
I/O BUSY
O-SD
O-CLK
I-SD
I-DISH.S
PS151
GP1S53V
TURN TABLE
SENSOR
I-SW
S101 OPEN/CLOSE
S102 UP/DOWN
SW
BM0
～
BM7
A8
～
A12
8.00MHz
BM0
～
BM7
IC204
BR6265BF-NIOSL
64K SRAM
A0
～
A7
IC203
74HC373
ADDRESS
TIMING
GENERATOR
A0
～
A2
B
G
R
F01
F02
IC402
BU2173F
CLOCK GENERATOR
13.5MHz
F01 40.5MHz (MPEG)
F02 27.0MHz (VCD)
28.636MHz (NTSC)
28.375MHz (PAL)
VCD/CDG
XNTSC
O-CLOSE
O-OPEN
O-DISH-R
O-DISH-S
IC103
LB1644
TRAY, TURN TABLE
DRIVER
M401
TURN TABLE
MOTOR
TRAY MOTOR
HSYNC
VSYNC
BD0
～
BD7
GD0
～
GD7
RD0
～
RD7
F02
ENCRST
VCD/CDG
XNTSC
PAL/PAL60
IC401
BU1417K
VIDEO DAC
+
RGB ENCODER
C OUT
Y OUT
VCD/CDG
VIDEO OUT
Q402, 403
Y SIGNAL BAND
SWITING
TO A MAIN VCO C.B CON102


PICK UP ASSY
CN1
FC4
B CD MECHA C.B
CN101
IC101
IC102
SFR101
SFR102
SFR103
TP2 (TE)
TP3 (VREF)
TP1 (RF)
CON102
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
FC401
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
FC2
TO F VCD C.B J6
CON6
(GRY) (PUL) (BLU) (GRN) (YEL) (ORG) (RED) (BRN)
TO F VCD C.B
(GRN)
G ONLY
TO F VCD C.B J4
CON4
(BLK) (YEL)
A MAIN VCD C.B
TO F VCD C.B J5
CON5
C119
SW201 (OPEN)
SW202 (UP)
FROM MAIN UNIT FRONT BLOCK
CON103
IC201
IC101
IC401
IC102
CON101
C114
X101
X401
J101
J101 VIDEO OUT
TO F VCD C.B J4
EXCEPT G
D ONLY
G ONLY
EXCEPT G
IC202
IC301
IC402
IC103
CON104
CON105
CON106
CON107
DIGITAL OUT (OPTICAL)
D ONLY
F ONLY
M201
M201 (TRAY LOADING MOTOR)
TO F VCD C.B
(RED)
FC401
(WHT)
(GRY)
TO F VCD C.B J2
CON2
CN107
(BLU) (BLU) (BLU) (YEL) (BLK) (BLK)
CON108
TO MAIN UNIT POWER BLOCK
FC3
FROM MAIN UNIT MAIN BLOCK
F ONLY
D LED C.B
PIN 106
LED 104
LED 103
LED 102
LED 101
LED101-104 (CD TRAY LIGHTING)

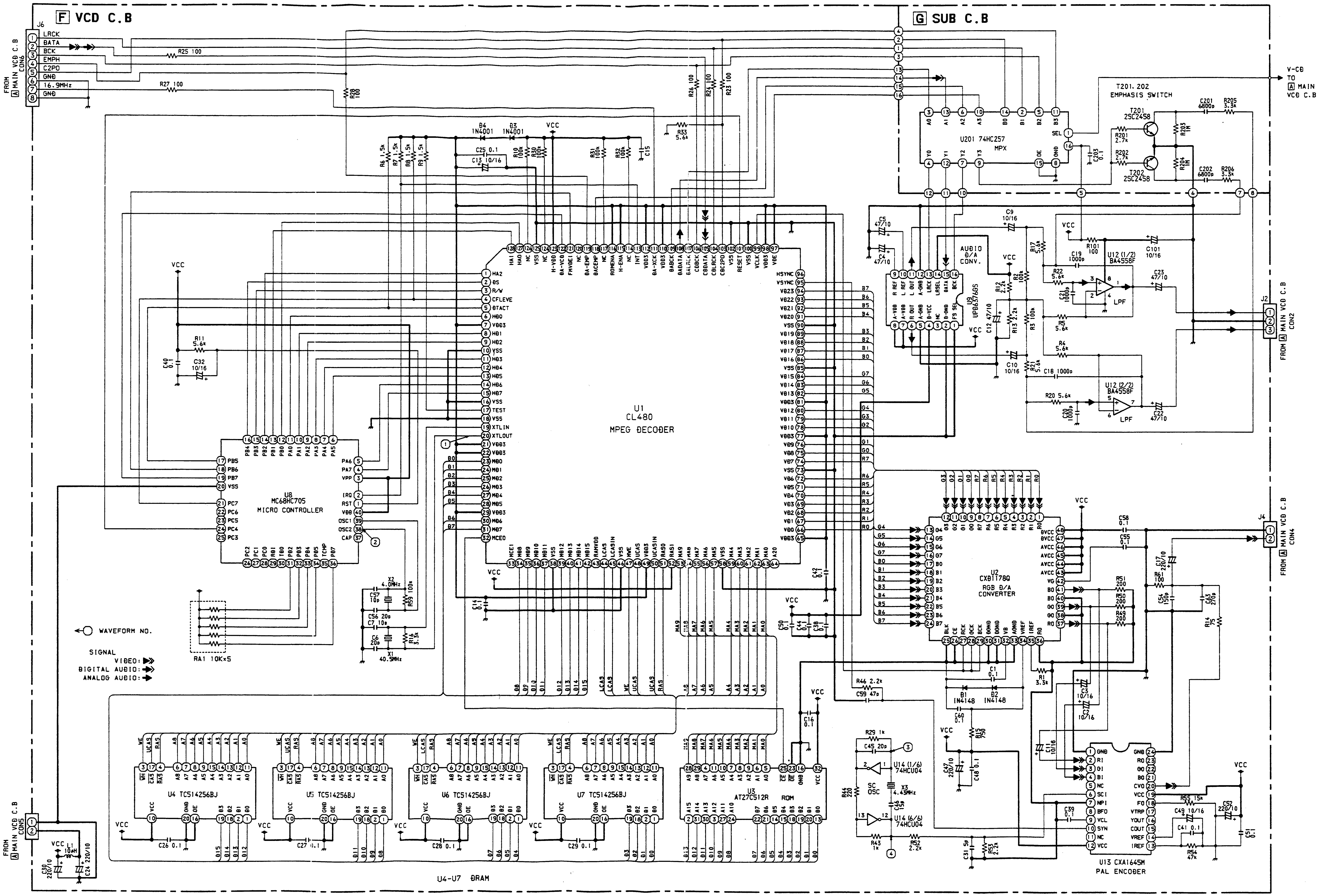
CHEMATIC DIAGRAM-1 (V3L: CD MECHA)


TO A MAIN VCD C.B CON101
MDP
SWIL
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
+5V
GND
5V
IC101
CXA1782BQ
RF SIGNAL
SERVO PROCESSOR
IC102
BA6791FP
MOTOR/
COIL
DRIVER
M101
SPINDLE MOTOR
M102
SLED MOTOR
SW101
INSIDE LIMIT SWITCH
Q101
2SA1162GR
LD DRIVE
TP1 (RF)
TP2 (TB)
TP3 (VREF)
FOCUS BIAS ADJ.
SFR101 47K
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
CON101
CN1
LD
PD
TRACKING COIL
FOCUS COIL
+2.5V
+5V
E
D
A
B
C
F
PDIC
PICK UP ASSY
KSS-213B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

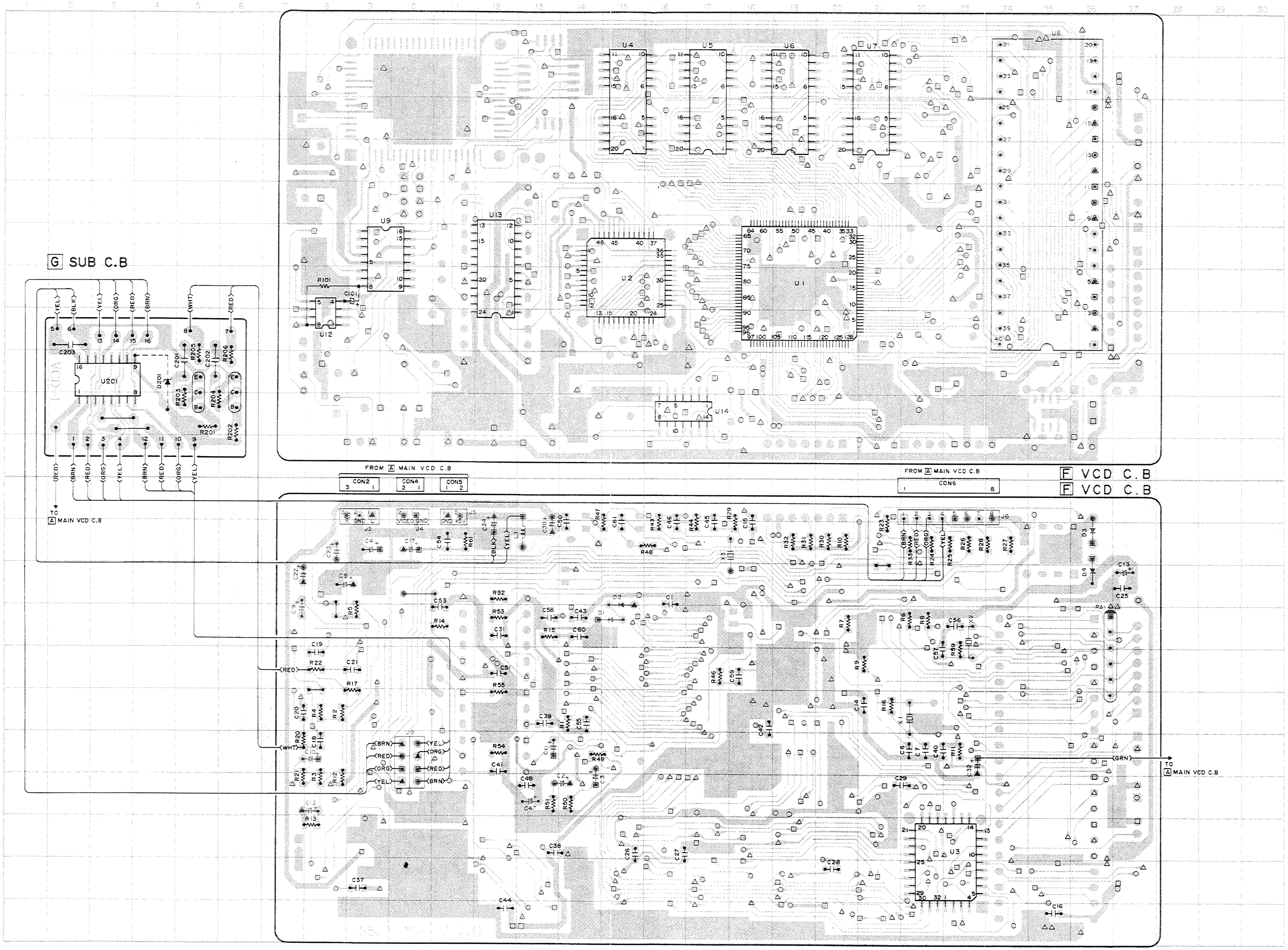
SCHEMATIC DIAGRAM-2 (V3L: MAIN VCD)

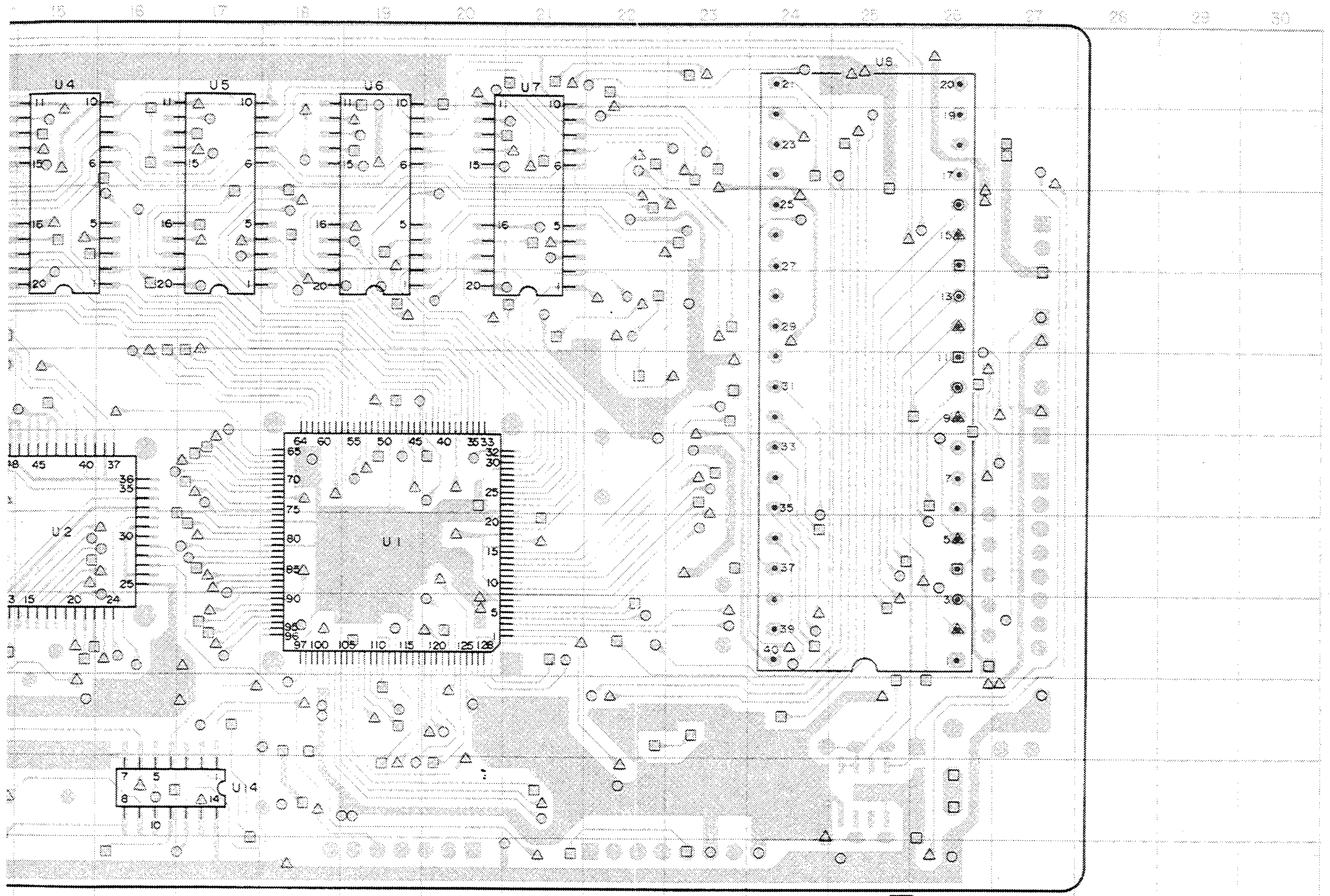

A MAIN VCD C.B
G ONLY
F ONLY
TO F VCD C.B
TO B CD MECHA C.B CON102
CON101
CLK
XLT
DATA
C OUT
SENS
FOK
RF
A GND
PSV
D GND
ILSW
SPDI
DRAM IC402 LC32464P-80
IC401 LC7872E CD-G SIGNAL PROCESSOR
X401 17.7344MHz
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
IC201 μPD78044BGF-026 MICRO PROCESSOR
X201 3.58MHz
IC202 LA6530 MOTOR DRIVER
M201 (TRAY LOADING MOTOR)
(OPEN SW) SW201
(UP SW) SW202
CON105
CON401
M401 (DISH MOTOR)
PS401 GP1S53V
C T-T C.B
LED101-104 (CD TRAY LIGHTING)
CON106
D LED C.B
LED101, 104 SEL1810DM
LED 102, 103 SEL1550CM
IC301 NJM78L05A
Q201 DTC123JK LED DRIVER
Q302 DTC124XK RESET
Q301 2SC2712GR
D301 1SS133
CON104
VM (12V)
D-GND
CDON
R CH
A-GND
L CH
FROM MAIN UNIT MAIN BLOCK
Q306 DTA123JK MUTE
Q304 2SC3326B MUTE
Q305 DTA123JK MUTE
Q303 2SC3326 MUTE
PR101 1A 60V
Q104 2SA1162 SW GR
Q105 2SC2712GR SW
Q106 2SC2712 GR SW
Q102 DTC124XK SW
CN107
CON107
AC
AC
FROM MAIN UNIT POWERBOOK
Q107 2SA1296GR +5V SW
Q108 DTC124XK SW
Q101 DTC124XK SW
IC103 GP1F32T
DIGITAL OUT (OPTICAL)
D ONLY
J101 VIDEO OUT
VIDEO AMP IC102 NJM2244L
EXCEPT G
CON4
TO F VCR C.B J4 G ONLY
CON6
LRCK
DATA
BCK
EMPH
GND
16M
GND
TO F VCR C.B J6
CON5
+5V
GND
TO F VCR C.B J5
CON103
M-STAND BY
CLOCK
DATA
D-REQ
I-KEY
CD-LED
FROM MAIN UNIT FRONT BLOCK
CON2
R
GND
L
TO F VCR C.B J2
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

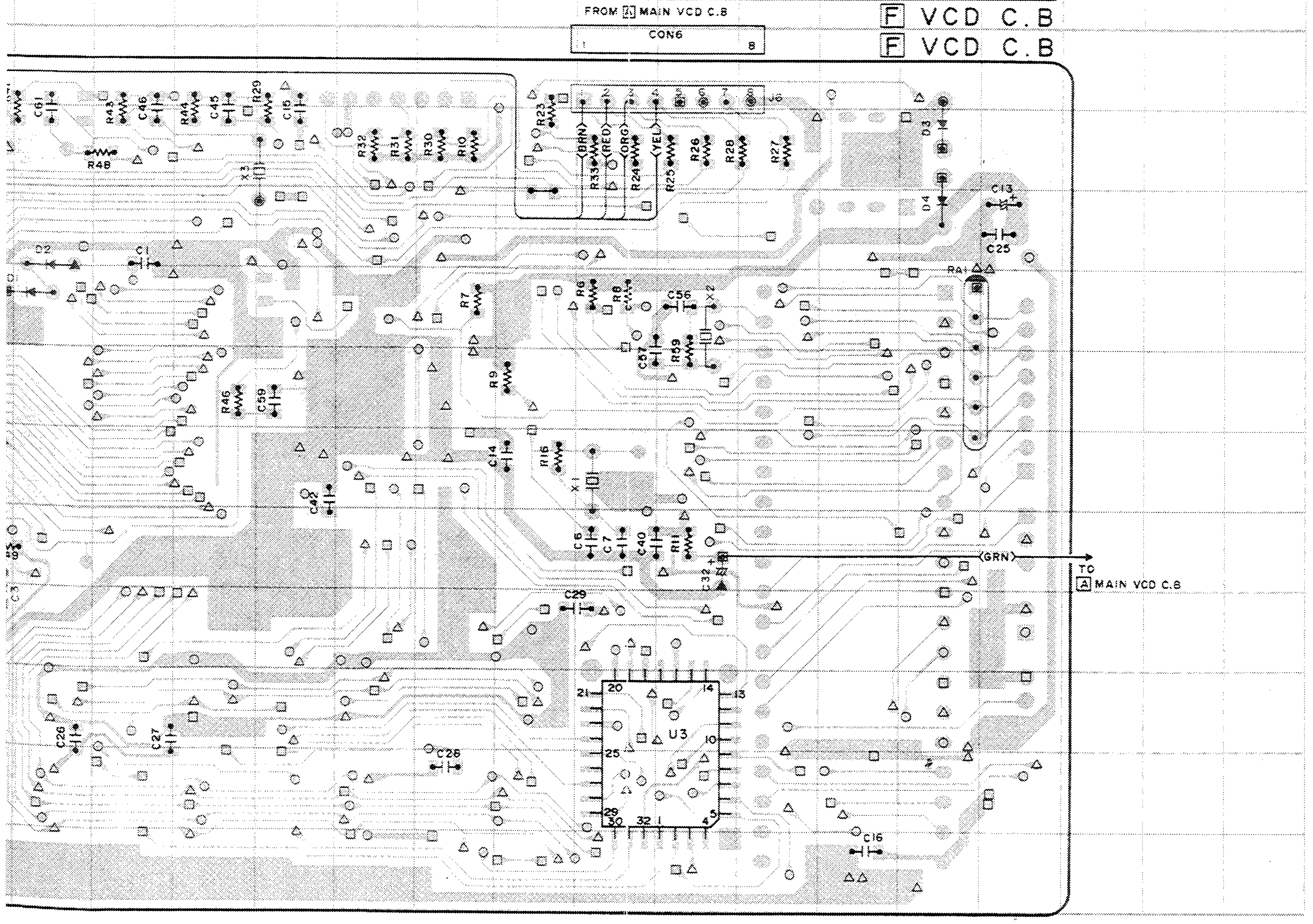
SCHEMATIC DIAGRAM-3 (V3L: VCD)


F VCD C.B
G SUB C.B
J6
LRCK
DATA
BCK
EMPH
C2PO
GND
16.9MHz
GND
FROM A MAIN VCD C.B CON6
R25 100
R27 100
R28 100
R26 100
R24 100
R23 100
R33 5.6k
D4 1N4001
D3 1N4001
VCC
C25 0.1
C13 10/16
R6 1.5k
R7 1.5k
R8 1.5k
R9 1.5k
R10 100k
R30 100k
R31 100k
R32 100k
C15
U1
CL480
MPEG DECODER
U8
MC68HC705
MICRO CONTROLLER
R11 5.6k
C32 10/16
C40 0.1
X2 4.0MHz
C57 10p
C56 20p
C7 10p
C6 20p
X1 40.5MHz
R59 100k
R18 3.3k
RA1 10K×5
WAVEFORM NO.
SIGNAL
VIDEO:
DIGITAL AUDIO:
ANALOG AUDIO:
C14 0.1
C42 0.1
C50 0.1
C44 0.1
C38 0.1
U4 TC514256BJ
U5 TC514256BJ
U6 TC514256BJ
U7 TC514256BJ
U3 AT27C512R ROM
C26 0.1
C27 0.1
C28 0.1
C29 0.1
C16 0.1
U4-U7 DRAM
FROM A MAIN VCD C.B CON5
L1 10μH
C30 220/10
C24 220/10
V-CD TO A MAIN VCD C.B
T201, 202 EMPHASIS SWITCH
T201 2SC2458
T202 2SC2458
R201 2.7k
R202 2.7k
R203 1M
R204 1M
C201 6800p
C202 6800p
R205 3.3k
R206 3.3k
U201 74HC257 MPX
C203 0.1
C5 47/10
C4 47/10
C9 10/16
AUDIO D/A CONV.
U9 UPD63761GS
C12 47/10
R13 2.2k
R12 2.2k
R2 100k
R3 100k
R5 5.6k
R4 5.6k
R17 5.6k
R21 5.6k
R22 5.6k
R101 100
C19 1000p
C21 1000p
C18 1000p
C20 1000p
C10 10/16
C101 10/16
C23 47/10
C22 47/10
U12 (1/2) BA4558F
U12 (2/2) BA4558F
LPF
R20 5.6k
J2
FROM A MAIN VCD C.B CON2
J4
FROM A MAIN VCD C.B CON4
U2 CXD1178Q RGB D/A CONVERTER
C58 0.1
C55 0.1
R51 200
R50 200
R49 200
R61 100
C54 150p
C17 220/10
C63 270p
R14 75
R1 3.3k
C1 0.1
D1 1N4148
D2 1N4148
C3 10/16
C2 10/16
C11 10/16
R46 2.2k
C59 47p
C60 0.1
R15 680
R29 1k
C45 20p
U14 (1/6) 74HCU04
U14 (6/6) 74HCU04
SC OSC
X3 4.43MHz
C46 15p
R44 220
R43 1k
R52 2.2k
C47 220/10
C48 0.1
C31 5p
R53 2.2k
C39 0.1
U13 CXA1645M PAL ENCODER
R55 15k
C49 10/16
C41 0.1
R54 47k
C52 220/10
C51 0.1

WIRING-2 (V3L: VCD)


G SUB C.B
U201
C203
C201
C202
D201
R201
R202
R203
R204
R205
R206
(YEL)
(BLK)
(ORG)
(RED)
(BRN)
(WHT)
TO
A MAIN VCD C.B
FROM A MAIN VCD C.B
CON2
CON4
CON5
CON6
F VCD C.B
F VCD C.B
U1
U2
U3
U4
U5
U6
U7
U8
U9
U12
U13
U14
R101
C101
J2
J4
J5
J6
GND
VIDEO GND
GND +5V
X1
X2
X3
D1
D2
D3
D4
RA1
(GRN)
TO
A MAIN VCD C.B


U4
U5
U6
U7
U8
U1
U2
U14

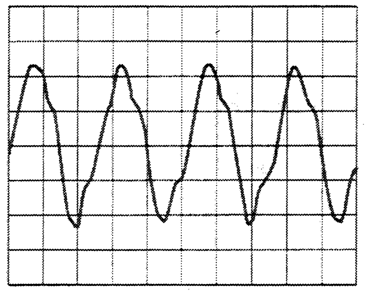

FROM Ⓐ MAIN VCD C.B
CON6
J6
(GRN)
(RED)
(ORG)
(YEL)
(GRN)
TO
Ⓐ MAIN VCD C.B
U3
X1
X2
X3
D2
D3
D4
C1
C6
C7
C13
C14
C15
C16
C25
C26
C27
C28
C29
C32
C40
C42
C45
C46
C56
C57
C59
C61
R6
R7
R8
R9
R10
R11
R16
R23
R24
R25
R26
R27
R28
R29
R30
R31
R32
R33
R43
R44
R46
R48
R59
RA1

Ⓕ VCD C.B

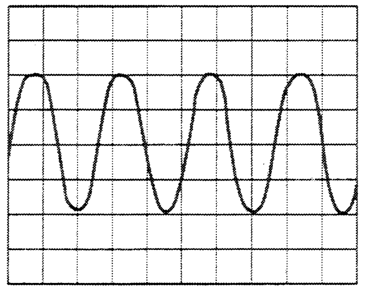
Ⓕ VCD C.B

WAVE FORM

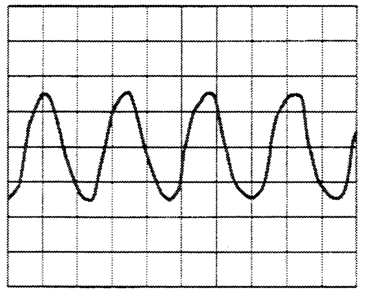
① U1 Pin ⑳ (XLT OUT) VOLT/DIV: 1V TIME/DIV: 10nS



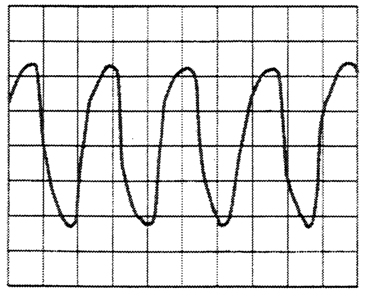
② U8 Pin ㊳ (OSC2) VOLT/DIV: 1V TIME/DIV: 100nS



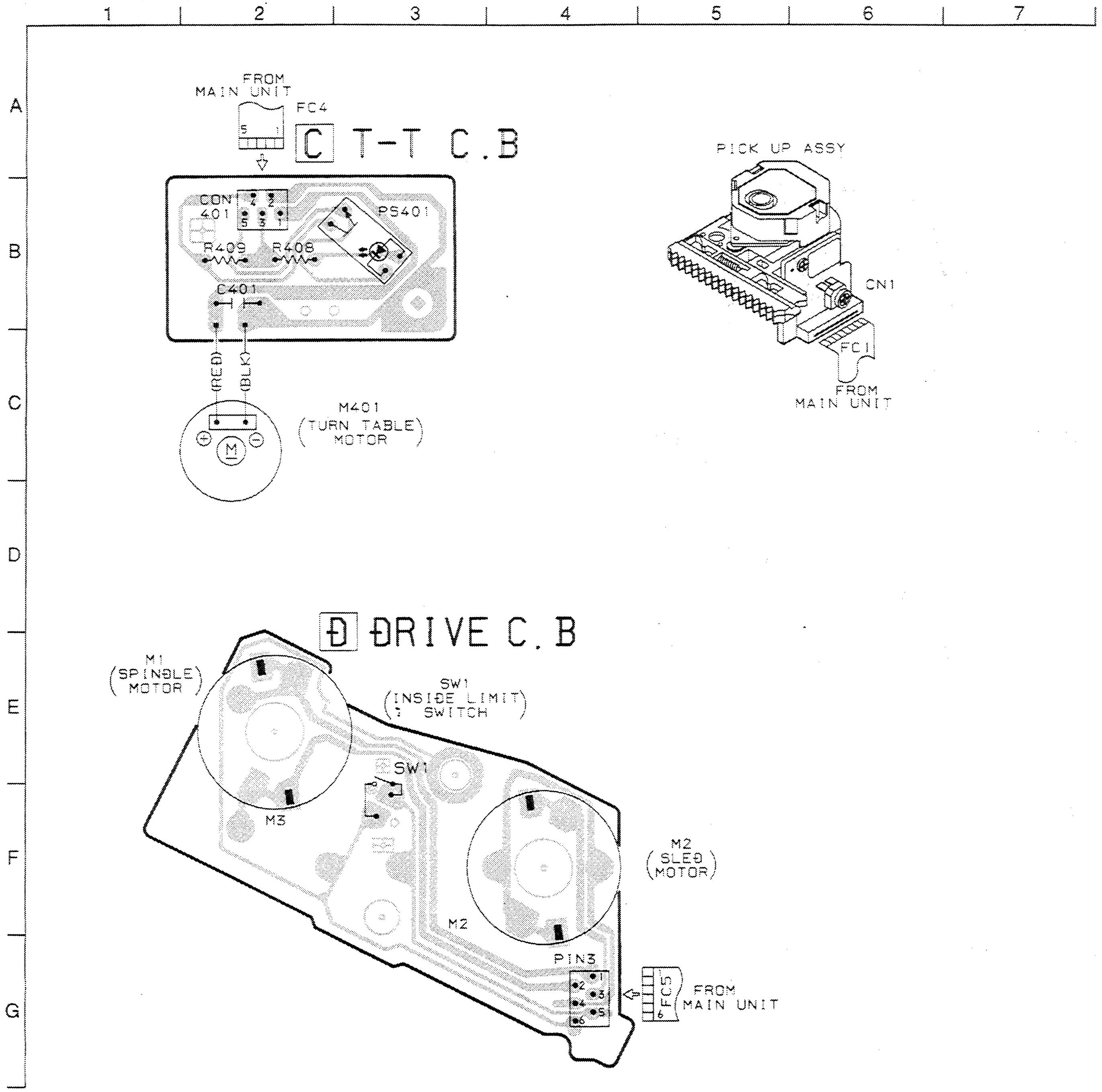
③ U14 Pin ① VOLT/DIV: 1V TIME/DIV: 100nS



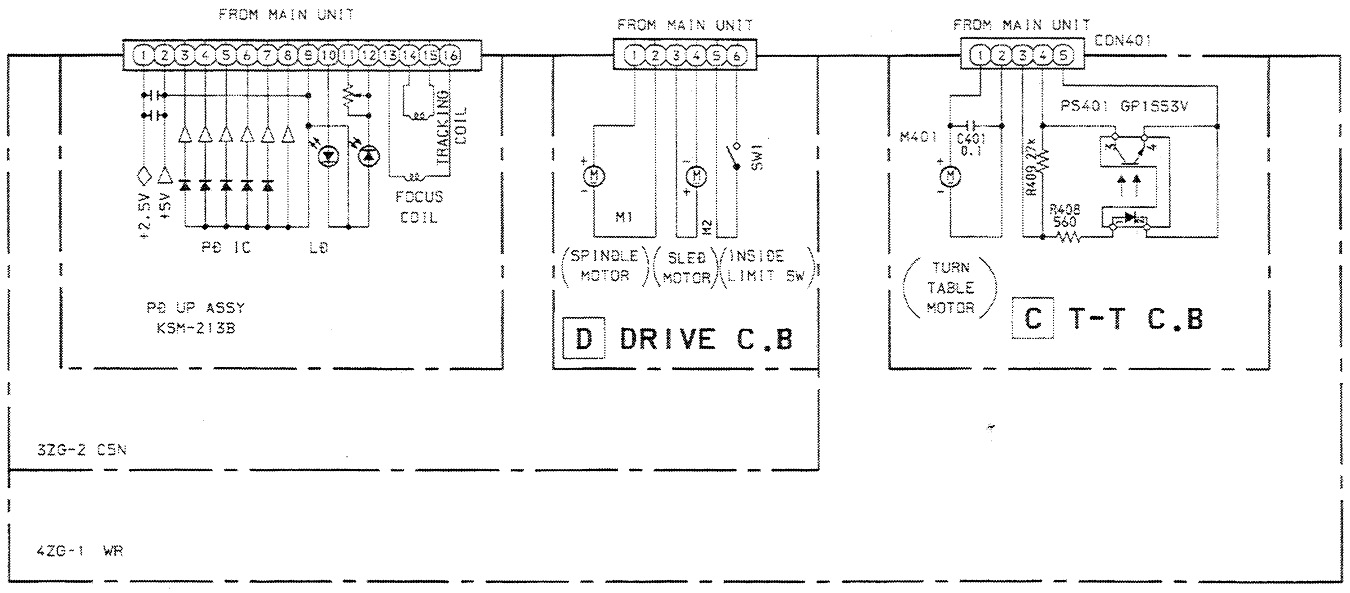
④ U14 Pin ⑫ VOLT/DIV: 1V TIME/DIV: 100nS



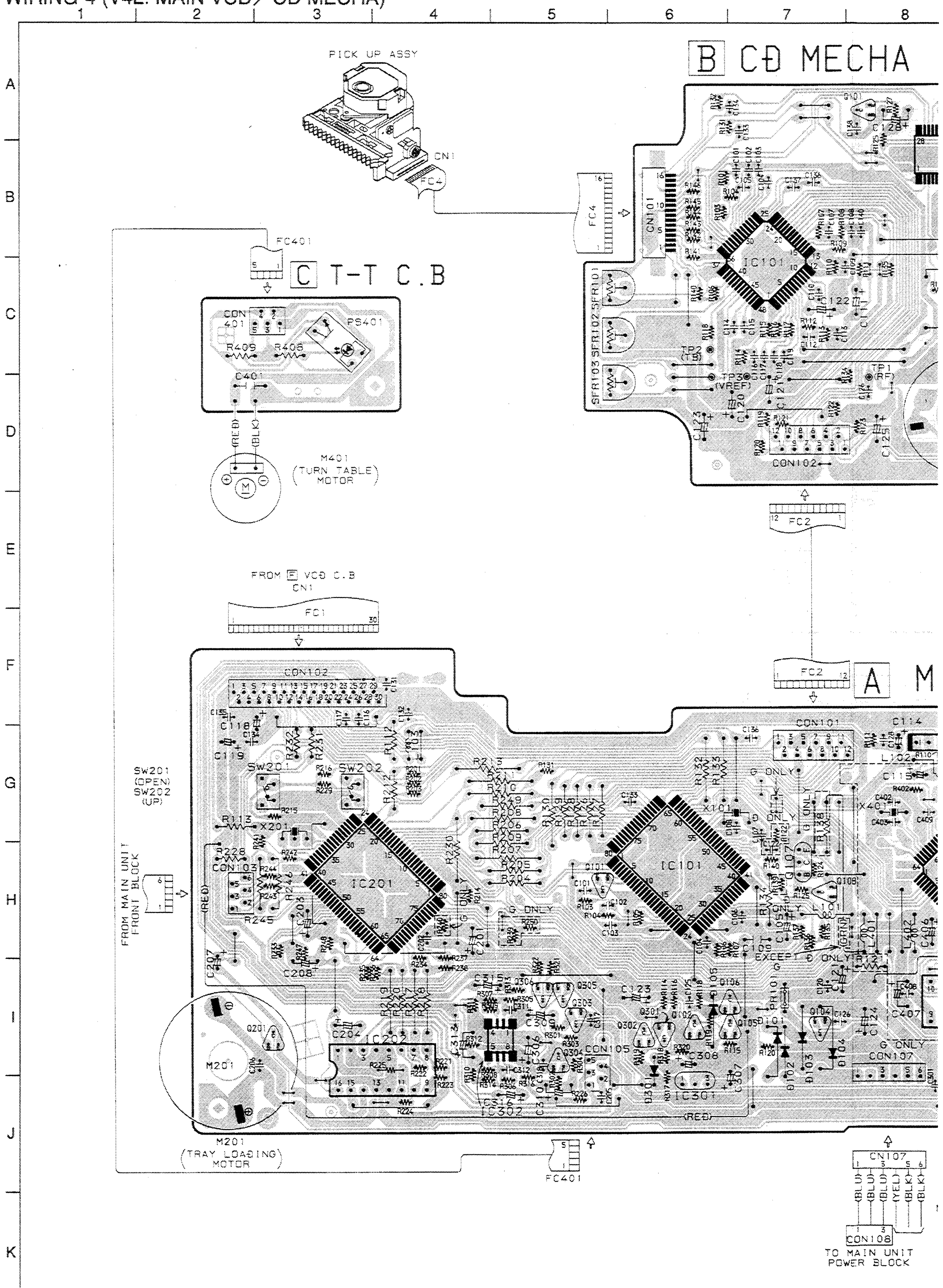
WIRING-3 (WR)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
FROM MAIN UNIT
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
D DRIVE C.B
M1 (SPINDLE MOTOR)
SW1 (INSIDE LIMIT SWITCH)
SW1
M3
M2 (SLED MOTOR)
M2
PIN3
FC5
FROM MAIN UNIT

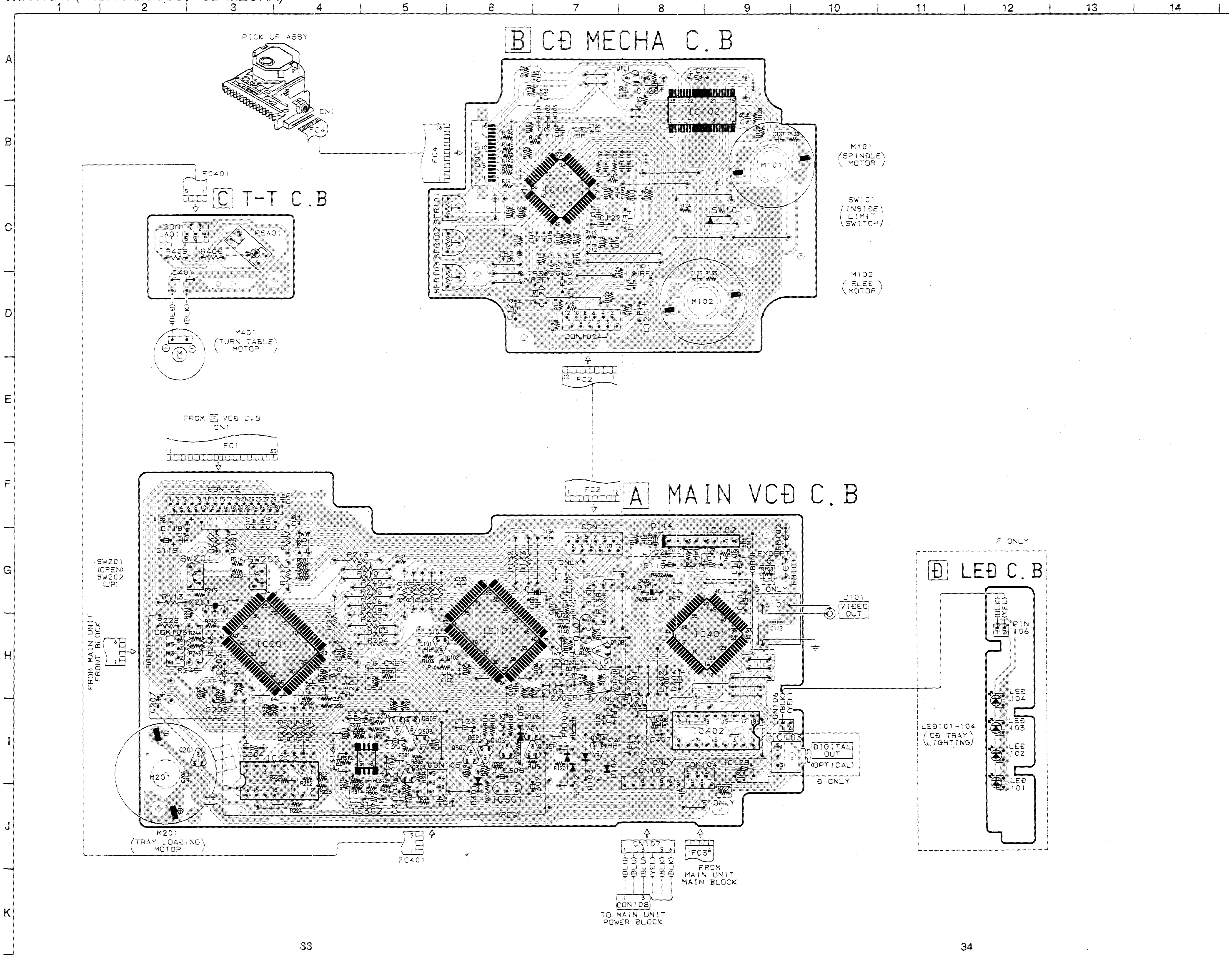
SCHEMATIC DIAGRAM-4 (WR)


FROM MAIN UNIT
FROM MAIN UNIT
FROM MAIN UNIT
CON401
+2.5V
+5V
PD IC
LD
FOCUS COIL
TRACKING COIL
PD UP ASSY KSM-213B
M1
M2
SW1
(SPINDLE MOTOR)
(SLED MOTOR)
(INSIDE LIMIT SW)
D DRIVE C.B
M401
C401 0.1
R409 27k
R408 560
PS401 GP1S53V
(TURN TABLE MOTOR)
C T-T C.B
3ZG-2 CSN
4ZG-1 WR

WIRING-4 (V4L: MAIN VCD／CD MECHA)

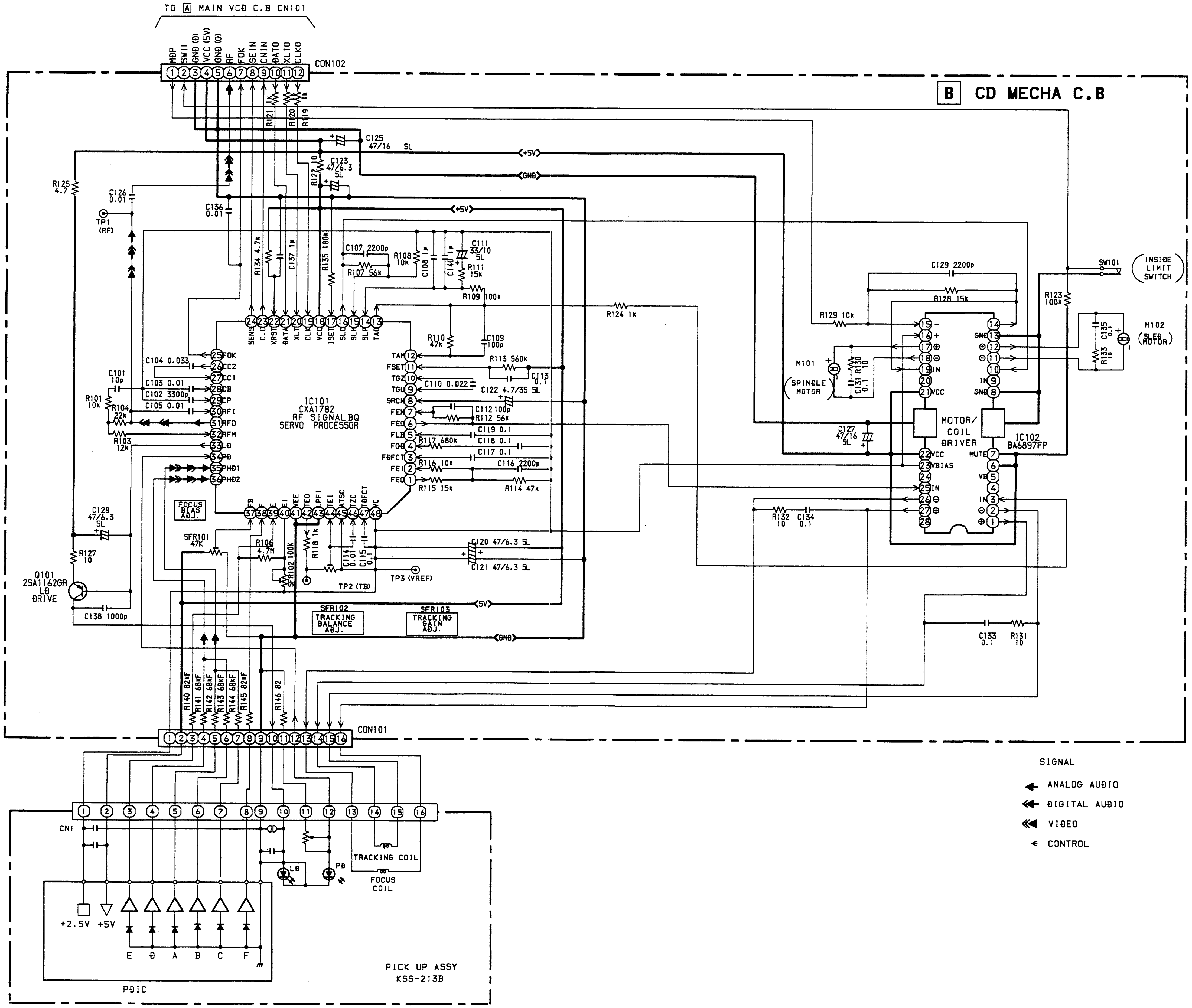

1
2
3
4
5
6
7
8
A
B
C
D
E
F
G
H
I
J
K
PICK UP ASSY
CN1
FC4
B CD MECHA
CN101
IC101
SFR101
SFR102
SFR103
TP2 (TE)
TP3 (VREF)
TP1 (RF)
CON102
FC2
FC401
C T-T C.B
CON 401
PS401
R409
R406
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
FROM F VCD C.B CN1
FC1
FC2
A M
CON102
CON101
SW201 (OPEN) SW202 (UP)
SW201
SW202
FROM MAIN UNIT FRONT BLOCK
IC201
IC101
CON103
X201
X101
X401
IC202
IC301
CON105
CON107
M201
M201 (TRAY LOADING MOTOR)
FC401
G ONLY
EXCEPT G ONLY
(RED)
CN107
(BLU)
(BLU)
(BLU)
(YEL)
(BLK)
(BLK)
CON108
TO MAIN UNIT POWER BLOCK

WIRING-4 (V4L: MAIN VCD／CD MECHA)



B CD MECHA C.B
PICK UP ASSY
CN1
FC4
CN101
IC101
IC102
SFR101
SFR102
SFR103
TP1 (RF)
TP2 (TE)
TP3 (VREF)
SW101
CON102
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
FC2
FC401
C T-T C.B
CON401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)
FROM F VCD C.B CN1
FC1
A MAIN VCD C.B
CON102
CON101
CON103
CON104
CON105
CON106
CON107
IC101
IC102
IC201
IC202
IC301
IC302
IC401
IC402
IC129
IC103
SW201
SW202
SW201 (OPEN) SW202 (UP)
FROM MAIN UNIT FRONT BLOCK
(RED)
M201
M201 (TRAY LOADING MOTOR)
FC401
J101
J101 VIDEO OUT
G ONLY
F ONLY
EXCEPT
DIGITAL OUT (OPTICAL)
D ONLY
CN107
(BLU) (BLU) (BLU) (YEL) (BLK) (BLK)
CON108
TO MAIN UNIT POWER BLOCK
FC3
FROM MAIN UNIT MAIN BLOCK
F ONLY
D LED C.B
(BLK) (YEL)
PIN 106
LED 104
LED 103
LED 102
LED 101
LED101-104 (CD TRAY LIGHTING)
A B C D E F G H I J K
1 2 3 4 5 6 7 8 9 10 11 12 13 14

SCHEMATIC DIAGRAM-5 (V4L: CD MECHA)


TO A MAIN VCD C.B CN101
MDP
SWIL
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
C125 47/16 5L
+5V
GND
R121 1k
R120 1k
R119 1k
R122 10
C123 47/6.3 5L
R125 4.7
C126 0.01
TP1 (RF)
C136 0.01
R134 4.7k
C137 1µ
R135 180k
C107 2200p
R107 56k
R108 10k
C108 1µ
C140 1µ
C111 33/10 5L
R111 15k
R109 100k
R124 1k
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.022
C122 4.7/35 5L
C112 100p
R112 56k
C119 0.1
R117 680k
C118 0.1
C117 0.1
R116 10k
C116 2200p
R115 15k
R114 47k
IC101
CXA1782
RF SIGNAL BQ
SERVO PROCESSOR
SENS
C.O
XRST
DATA
XLT
CLK
VCC
ISET
SLO
SL-
SL+
TAO
TA-
FSET
TGZ
TGU
SRCH
FE-
FEO
FLB
FGD
FDFCT
FEI
FED
FOK
CC2
CC1
CB
CP
RFI
RFO
RFM
LD
PD
PHD1
PHD2
FB
FE
TE
TEI
VEE
TEO
SPFI
ATSC
TZC
TDFCT
VC
C104 0.033
C103 0.01
C102 3300p
C105 0.01
C101 10p
R101 10k
R104 22k
R103 12k
FOCUS BIAS ADJ.
SFR101 47K
R106 4.7M
R102 100k
R118 1k
C114 0.01
C115 0.1
SFR102
C120 47/6.3 5L
C121 47/6.3 5L
TP2 (TB)
TP3 (VREF)
C128 47/6.3 5L
R127 10
Q101 2SA1162GR LD DRIVE
C138 1000p
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
5V
GND
R140 82kF
R141 68kF
R142 68kF
R143 68kF
R144 68kF
R145 82kF
R146 82
CON101
C129 2200p
R128 15k
R129 10k
R123 100k
SW101
INSIDE LIMIT SWITCH
M102 (SLED MOTOR)
C135 0.1
R133 10
M101
SPINDLE MOTOR
R130 10
C131 0.1
C127 47/16 5L
MOTOR/ COIL DRIVER
IC102 BA6897FP
VCC
GND
MUTE
VBIAS
IN
VB
R132 10
C134 0.1
C133 0.1
R131 10
CN1
LD
PD
TRACKING COIL
FOCUS COIL
+2.5V
+5V
E
D
A
B
C
F
PDIC
PICK UP ASSY KSS-213B

SIGNAL

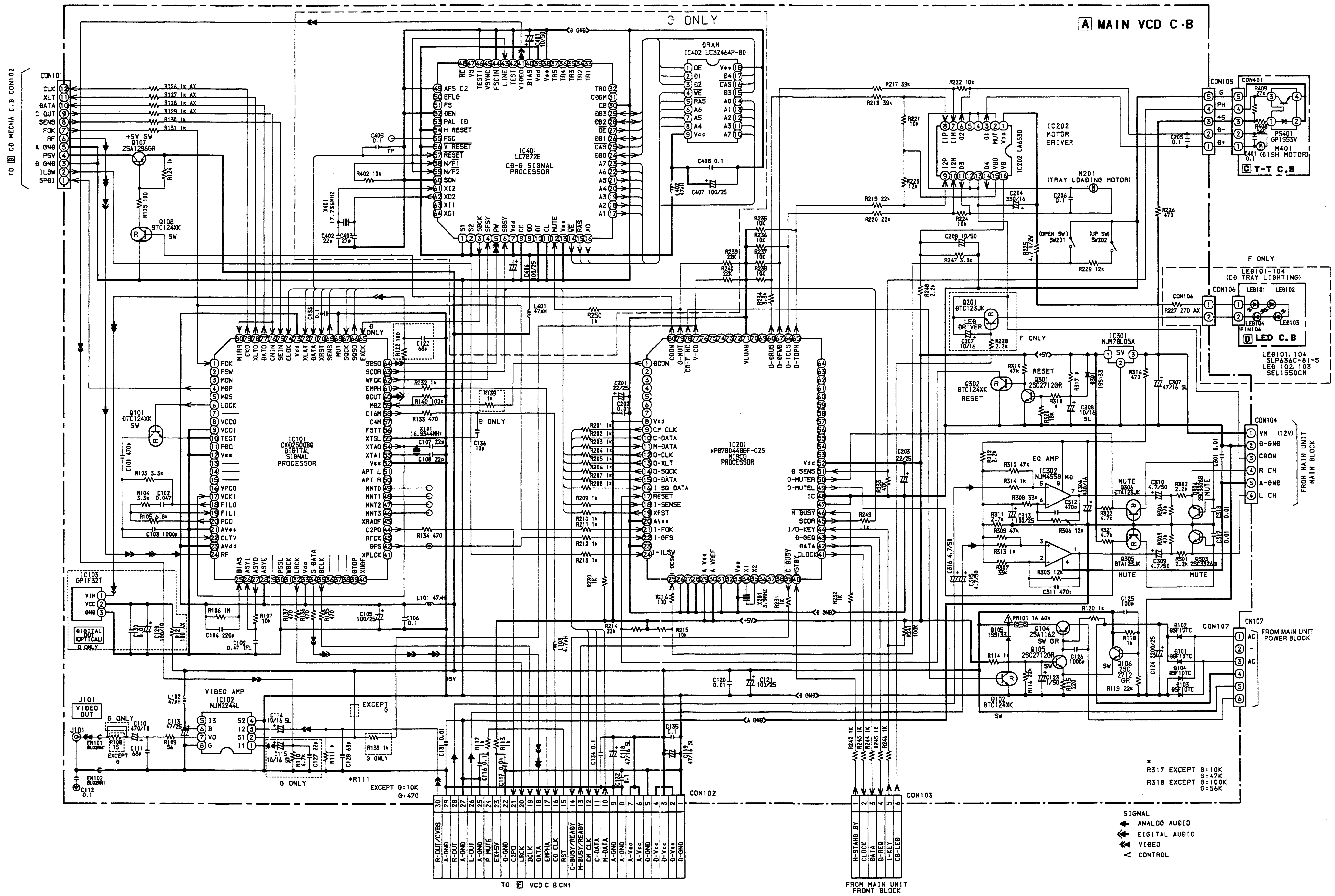
◄ ANALOG AUDIO

◄◄ DIGITAL AUDIO

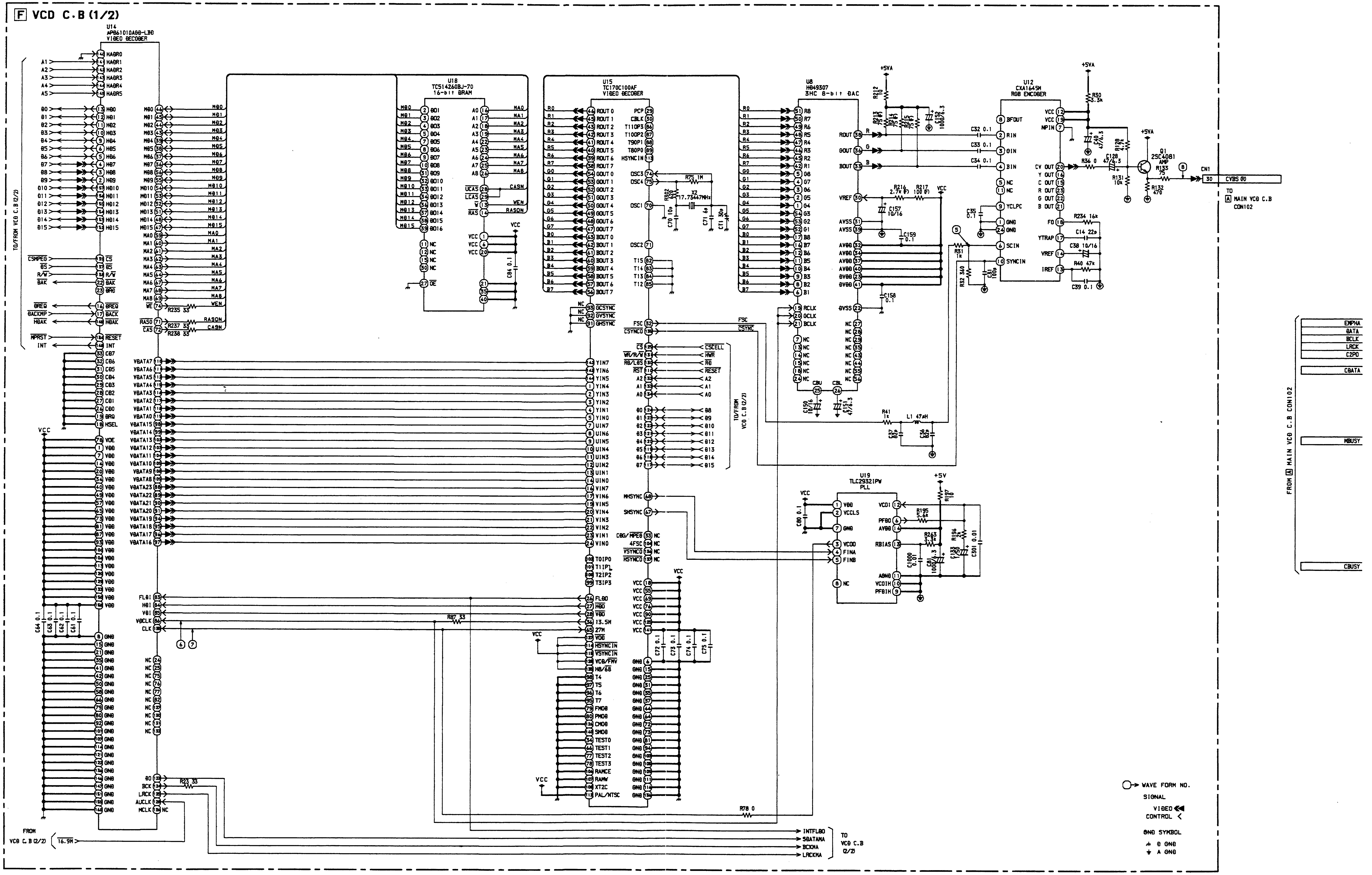
◄◄◄ VIDEO

< CONTROL

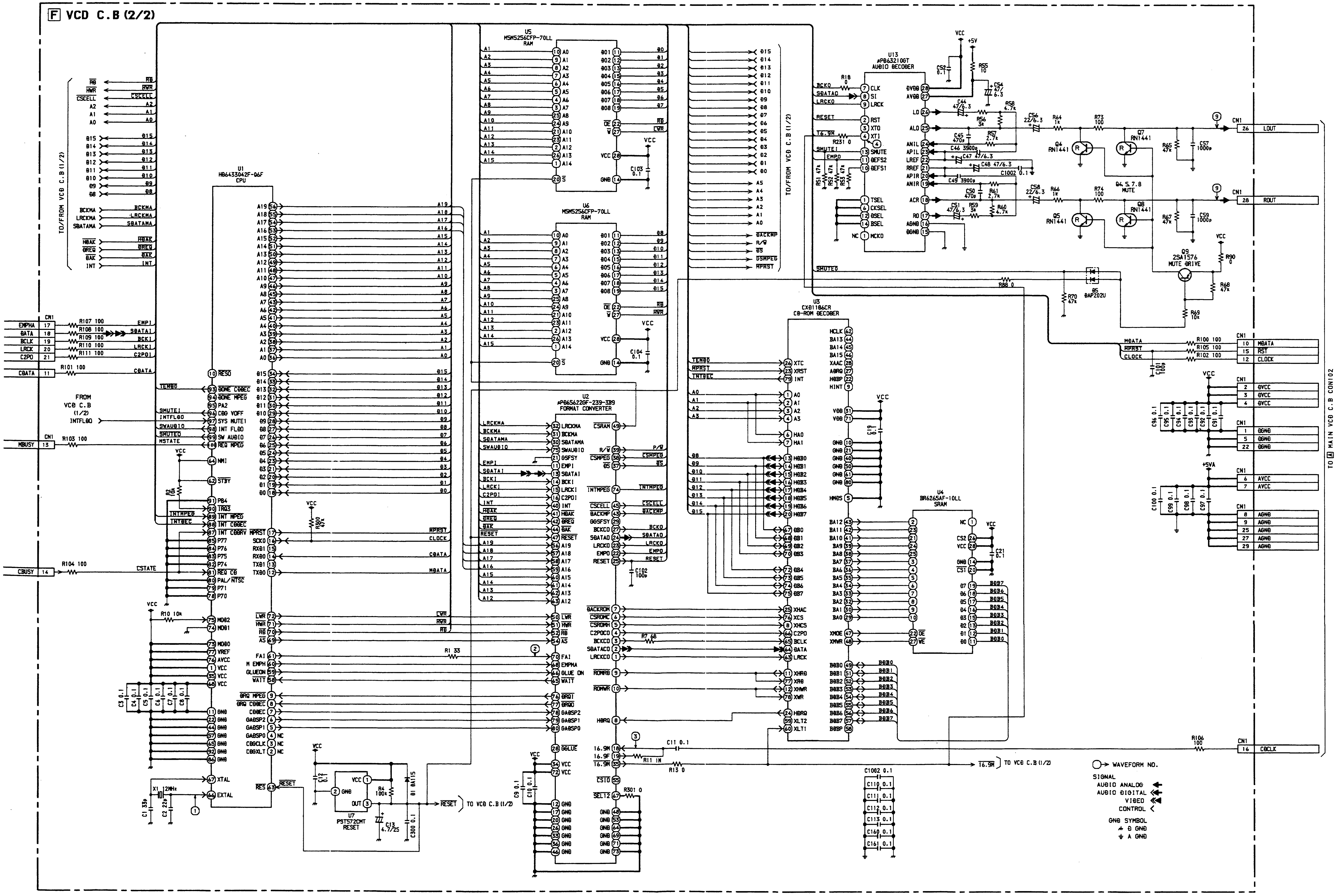
SCHEMATIC DIAGRAM-6 (V4L: MAIN VCD)



A MAIN VCD C.B
G ONLY
DRAM IC402 LC32464P-80
IC401 LC7872E CD-G SIGNAL PROCESSOR
X401 17.734MHZ
CON101
TO B CD MECHA C.B CON102
CLK
XLT
DATA
C OUT
SENS
FOK
RF
A GND
PSV
D GND
ILSW
SPDI
Q107 2SA1296GR
Q108 DTC124XK SW
Q101 DTC124XK SW
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
X101 16.9344MHz
IC201 MP0780448GF-025 MIRCO PROCESSOR
X201 3.9MHZ
IC202 LA6530 MOTOR DRIVER
M201 (TRAY LOADING MOTOR)
(OPEN SW) SW201
(UP SW) SW202
CON105
CON401
PS401 GP1S53V
M401 (DISH MOTOR)
C T-T C.B
F ONLY
LED101-104 (CD TRAY LIGHTING)
CON106
D LED C.B
LED101, 104 SLP636C-61-S
LED 102, 103 SEL1550CM
Q201 DTC123JK LED DRIVER
IC301 NJM78L05A
Q302 DTC124XK RESET
Q301 2SC2712GR
CON104
VM (12V)
D-GND
CDON
R CH
A-GND
L CH
FROM MAIN UNIT MAIN BLOCK
EQ AMP IC302 NJM4558MD
MUTE Q306 DTA123JK
Q304 2SC3326B MUTE
Q305 DTA123JK MUTE
Q303 2SC3326B MUTE
CN107
CON107
FROM MAIN UNIT POWER BLOCK
PR101 1A 60V
Q104 2SA1162 SW GR
Q105 2SC2712GR SW
Q106 2SC2712 GR SW
Q102 DTC124XK SW
D101 D102 D103 D104 DSF10TC
IC103 GP1F32T
DIGITAL OUT (OPTICAL) G ONLY
J101 VIDEO OUT
VIDEO AMP IC102 NJM2244L
EXCEPT G
G ONLY
*R111 EXCEPT G:10K G:470
CON102
TO F VCD C.B CN1
R-OUT/CVBS
A-GND
R-OUT
A-GND
L-OUT
A-GND
P.MUTE
EX+5V
D-GND
C2PO
LRCK
BCLK
DATA
EMPHA
CD CLK
RST
C-BUSY/READY
M-BUSY/READY
CM CLK
M-DATA
A-GND
A-GND
A-Vcc
A-Vcc
D-GND
D-Vcc
D-Vcc
D-GND
CON103
H-STAND BY
CLOCK
DATA
D-REQ
I-KEY
CD-LED
FROM MAIN UNIT FRONT BLOCK
*
R317 EXCEPT G:10K G:47K
R318 EXCEPT G:100K G:56K
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

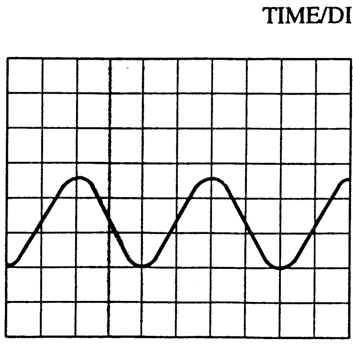

F VCD C.B (1/2)
U14 APB61010A6D-LBD VIDEO DECODER
U18 TC514260BJ-70 16-bit DRAM
U15 TC170C100AF VIDEO DECODER
U8 HD49307 3HC 8-bit DAC
U12 CXA1645M RGB ENCODER
Q1 2SC4081 AMP
U19 TLC2932IPW PLL
X2 17.734475MHz
L1 47μH
+5VA
+5V
VCC
CN1
CVBS (V)
TO A MAIN VCD C.B CON102
TO/FROM VCD C.B (2/2)
FROM VCD C.B (2/2) 16.9M
INTFLDD
SDATAMA
BCKMA
LRCKMA
TO VCD C.B (2/2)
EMPHA
DATA
BCLK
LRCK
C2PO
CDATA
MBUSY
CBUSY
FROM A MAIN VCD C.B CON102
WAVE FORM NO.
SIGNAL
VIDEO
CONTROL
GND SYMBOL
D GND
A GND

SCHEMATIC DIAGRAM-8 (V4L: VCD 2/2)

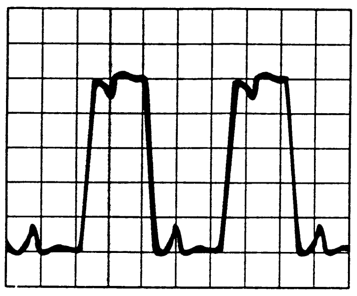

F VCD C.B (2/2)
TO/FROM VCD C.B (1/2)
U1
HD6433042F-06F
CPU
U5
MSM5256CFP-70LL
RAM
U6
MSM5256CFP-70LL
RAM
U2
µPD65622GF-239-3B9
FORMAT CONVERTER
U3
CXD1186CR
CD-ROM DECODER
U4
BR6265AF-10LL
SRAM
U13
µPD63210GT
AUDIO DECODER
U7
PST572CMT
RESET
Q4
RN1441
Q5
RN1441
Q7
RN1441
Q8
RN1441
Q4,5,7,8
MUTE
Q9
2SA1576
MUTE DRIVE
D5
BAP202U
D1 DAN115
X1 12MHz
FROM
VCD C.B
(1/2)
INTFLDD
CN1
EMPHA
DATA
BCLK
LRCK
C2PO
CDATA
MBUSY
CBUSY
LOUT
ROUT
MDATA
RST
CLOCK
DVCC
DGND
AVCC
AGND
CDCLK
TO A MAIN VCD C.B CON102
RESET) TO VCD C.B (1/2)
16.9M) TO VCD C.B (1/2)
VCC
+5V
+5VA
WAVEFORM NO.
SIGNAL
AUDIO ANALOG
AUDIO DIGITAL
VIDEO
CONTROL
GND SYMBOL
D GND
A GND

WAVE FORM

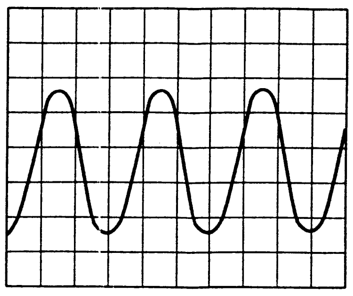
① U1 Pin (66) (EXTAL) VOLT/DIV: 1V TIME/DIV: 20nS



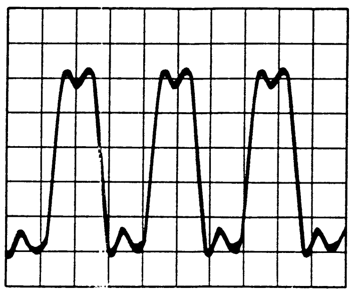
② U2 Pin (70) (FAI) VOLT/DIV: 1V TIME/DIV: 20nS



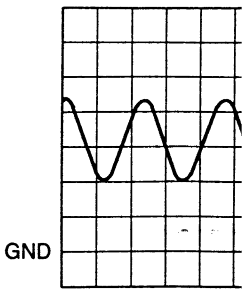
③ U2 Pin ⑱ (16.9M) VOLT/DIV: 1V TIME/DIV: 20nS



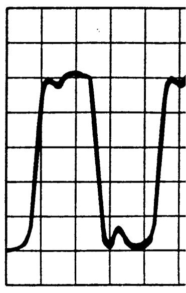
④ U13 Pin ④ (XTI) VOLT/DIV: 1V TIME/DIV: 20nS



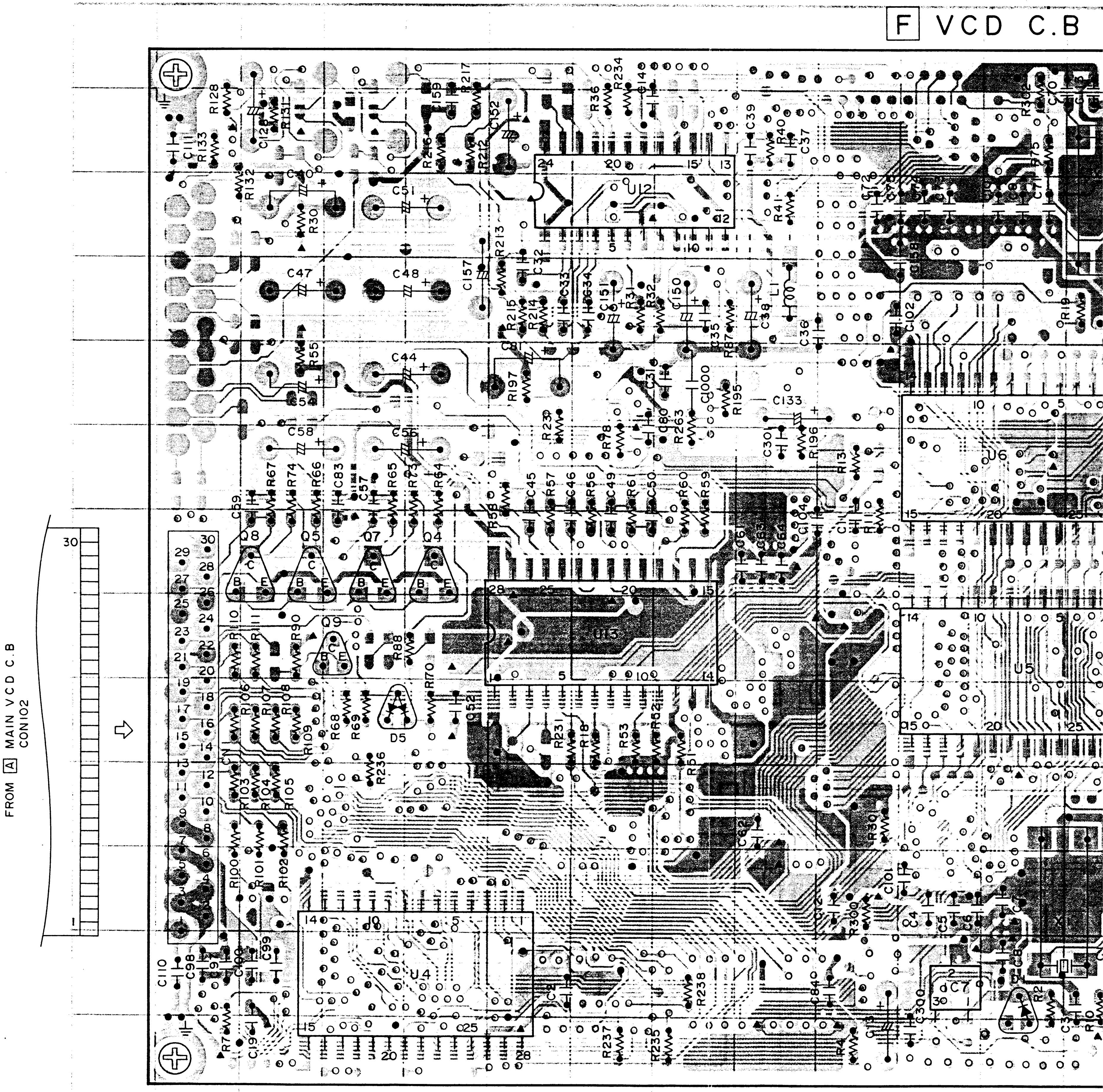
⑤ U12 Pin ⑥ (SC IN



⑥ U14 Pin (86) (VD C



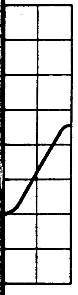
WIRING-5 (V4L: VCD)


F VCD C.B
FROM A MAIN VCD C.B CON102
30
1
U12
U13
U6
U5
U4
Q8
Q5
Q7
Q4
Q9
D5
C47
C48
C44
C51
C58
C56
C133
L1
R128
R133
R132
R131
R30
R36
R234
R41
R195
R196
R236

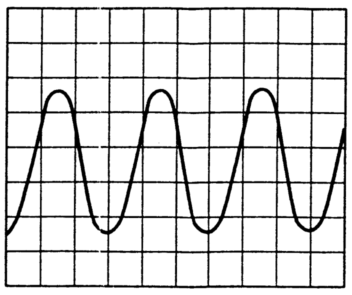
Through-Hole Note

SIGNAL	VCC	+5V	A GND	D GND
○	▲	▲	●	●

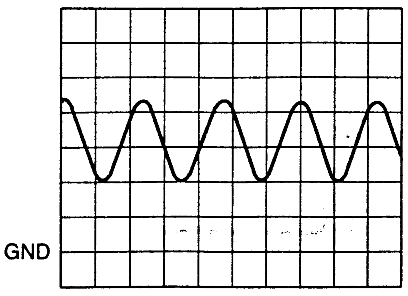
LT/DIV: 1V
ME/DIV: 20nS



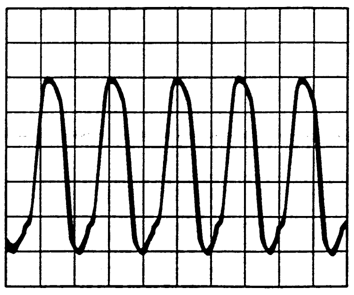
③ U2 Pin ⑱ (16.9M) VOLT/DIV: 1V
TIME/DIV: 20nS



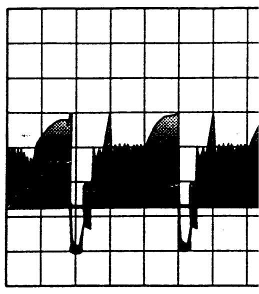
⑤ U12 Pin ⑥ (SC IN) VOLT/DIV: 1.0V
TIME/DIV: 0.1μS



⑦ U14 Pin ⑬⑤ (CLK) VOLT/DIV: 1V
TIME/DIV: 20nS

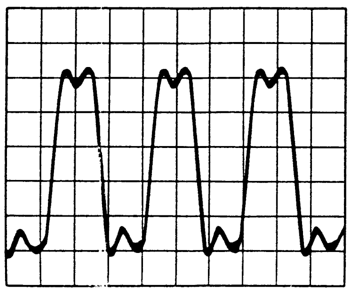


KARAOKE

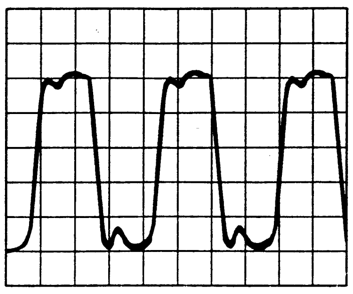


LT/DIV: 1V
ME/DIV: 20nS

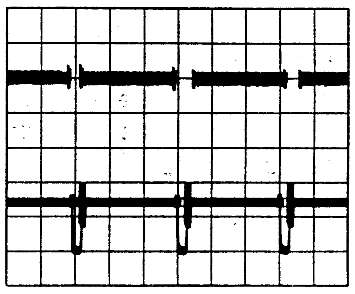
④ U13 Pin ④ (XTI) VOLT/DIV: 1V
TIME/DIV: 20nS



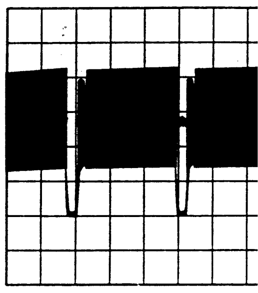
⑥ U14 Pin ⑧⑥ (VD CLK) VOLT/DIV: 1V
TIME/DIV: 20nS



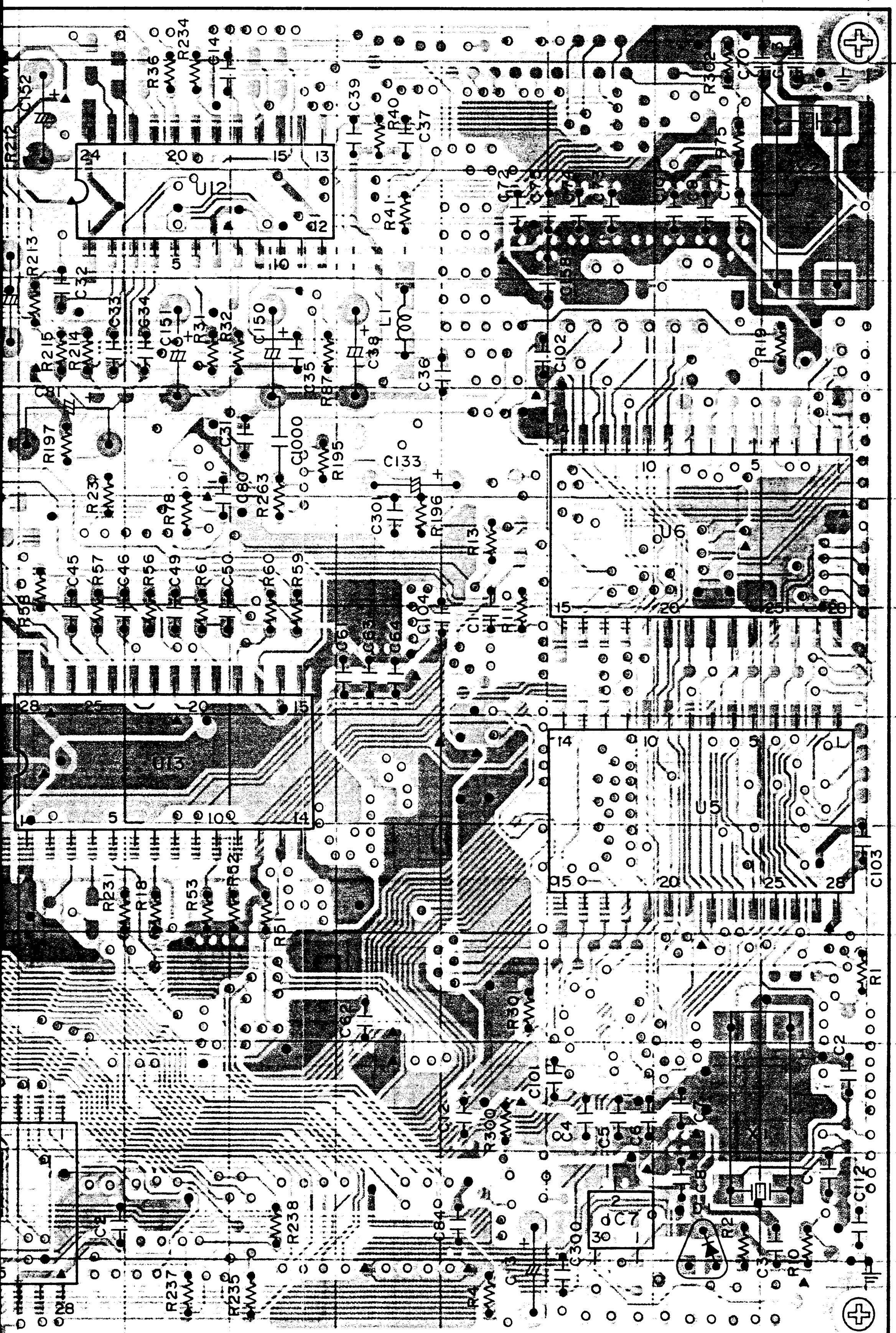
⑧ CN1 Pin ㉚ (CVBS R) VOLT/DIV: 200mV
WHITE TIME/DIV: 20μS



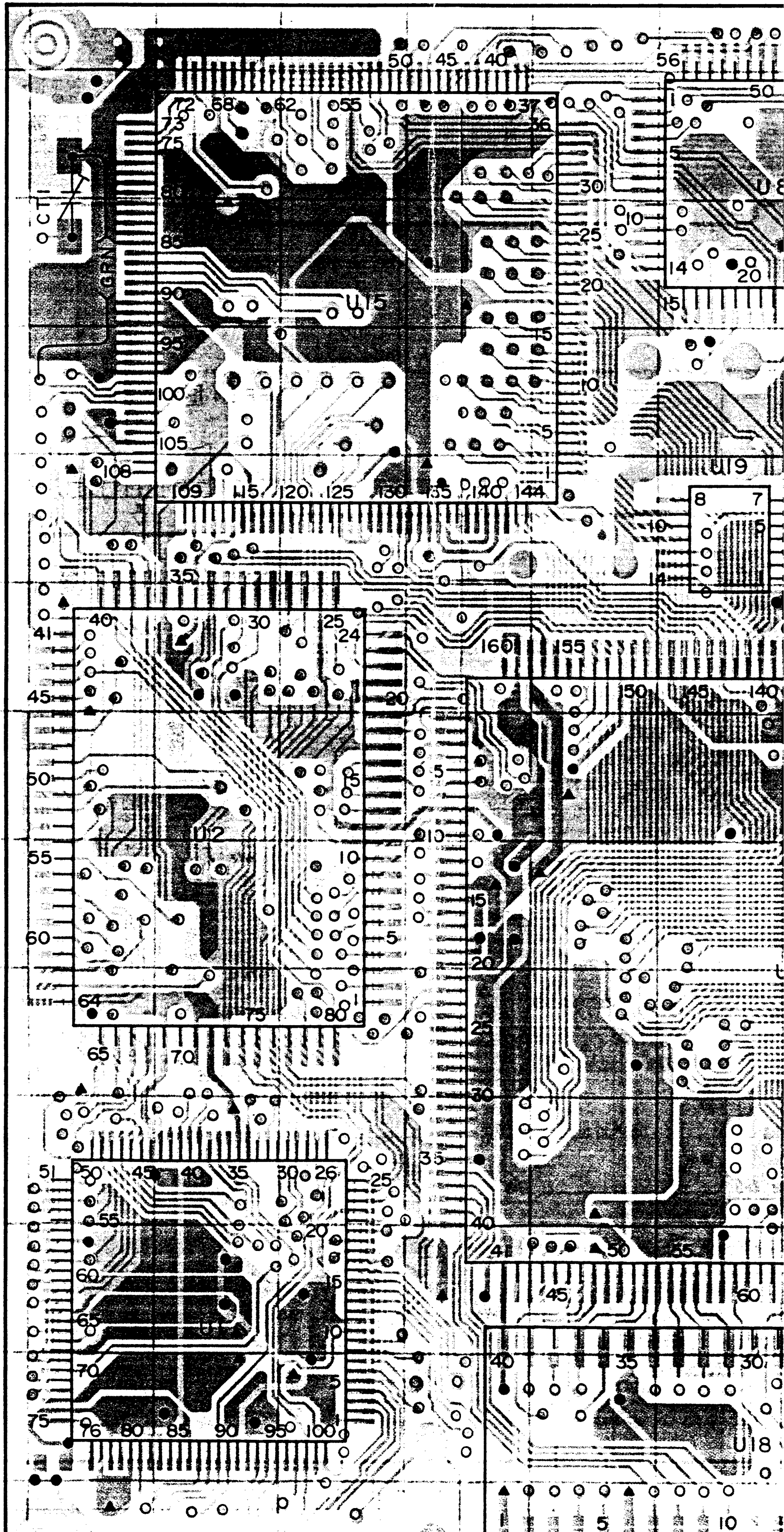
BLUE



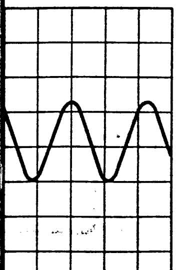
F VCD C.B


R36
R234
C140
C132
R212
C39
R40
C37
R41
U12
24
20
15
13
1
12
R213
C32
C33
R214
R216
C34
C151
R31
R32
C150
R35
C36
C102
R19
R197
C31
C1000
R195
C133
R23
R78
C80
R263
C30
R196
R13
U6
10
5
15
20
25
28
C45
R57
C46
R56
C49
R6
C50
R60
R59
C104
C63
C64
U15
14
U5
C103
R231
R18
R53
R52
R5
R30
C101
R300
C300
C7
30
C84
R238
R237
R235
R4
R1
C112
C2

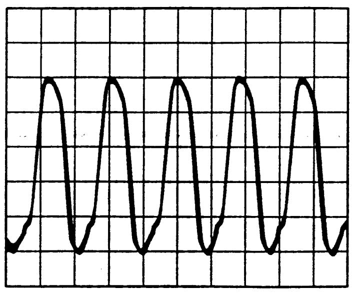
F VCD C.B


CT1
50
45
40
37
75
80
85
90
95
100
105
108
109
U5
120
125
130
135
140
144
U8
30
25
20
10
14
U19
8
7
41
45
50
55
60
64
65
70
75
80
U2
160
155
150
145
140
5
51
U1
76
80
85
90
95
100
U18
35
40
45
60

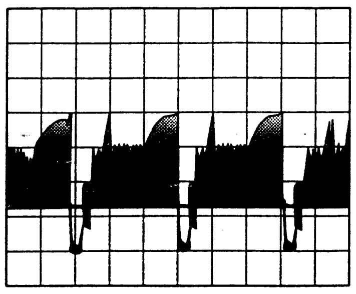
N) VOLT/DIV: 1.0V
TIME/DIV: 0.1µS



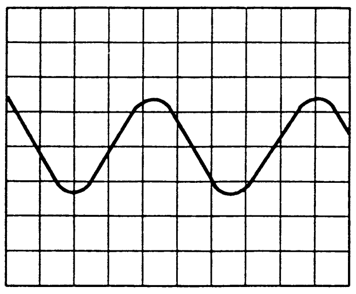
⑦ U14 Pin (135) (CLK) VOLT/DIV: 1V
TIME/DIV: 20nS



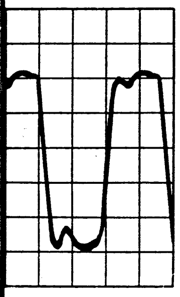
KARAOKE VOLT/DIV: 200mV
TIME/DIV: 20µS



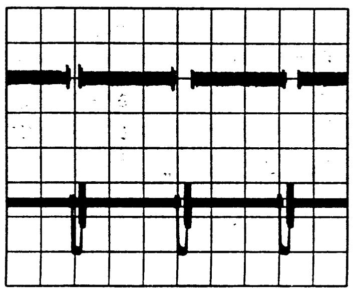
⑨ CN1 Pin ㉖ (L OUT) VOLT/DIV: 1.0V
CN1 Pin ㉘ (R OUT) TIME/DIV: 0.2mS
1kHz OUTPUT



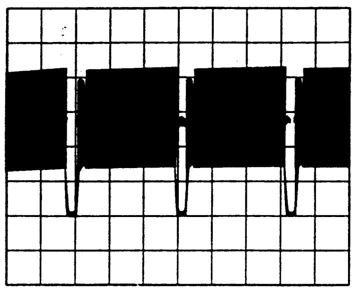
LK) VOLT/DIV: 1V
TIME/DIV: 20nS

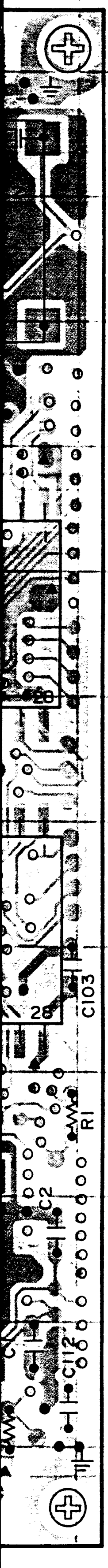


⑧ CN1 Pin ㉚ (CVBS R) VOLT/DIV: 200mV
WHITE TIME/DIV: 20µS

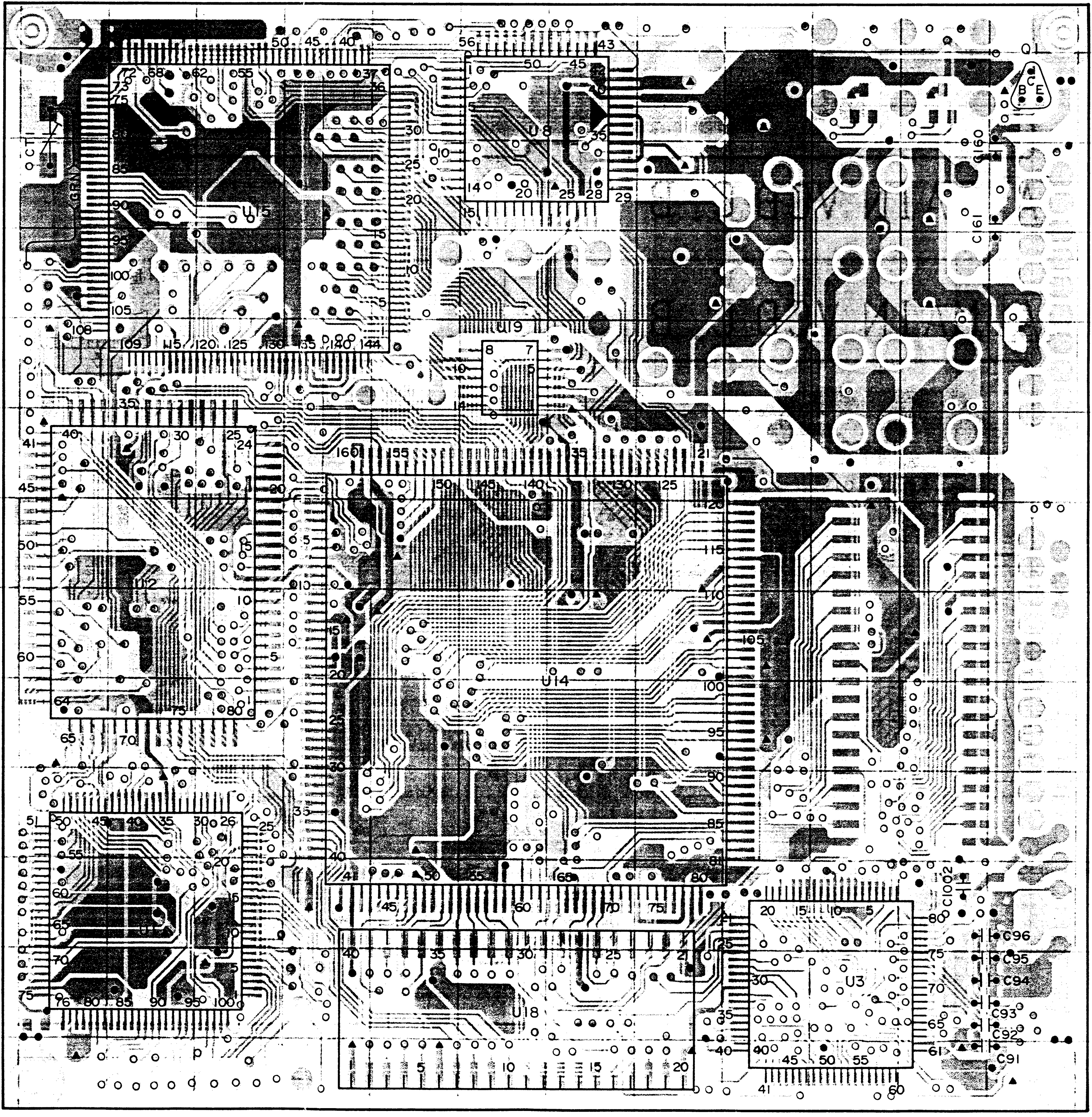


BLUE VOLT/DIV: 100mV
TIME/DIV: 20µS

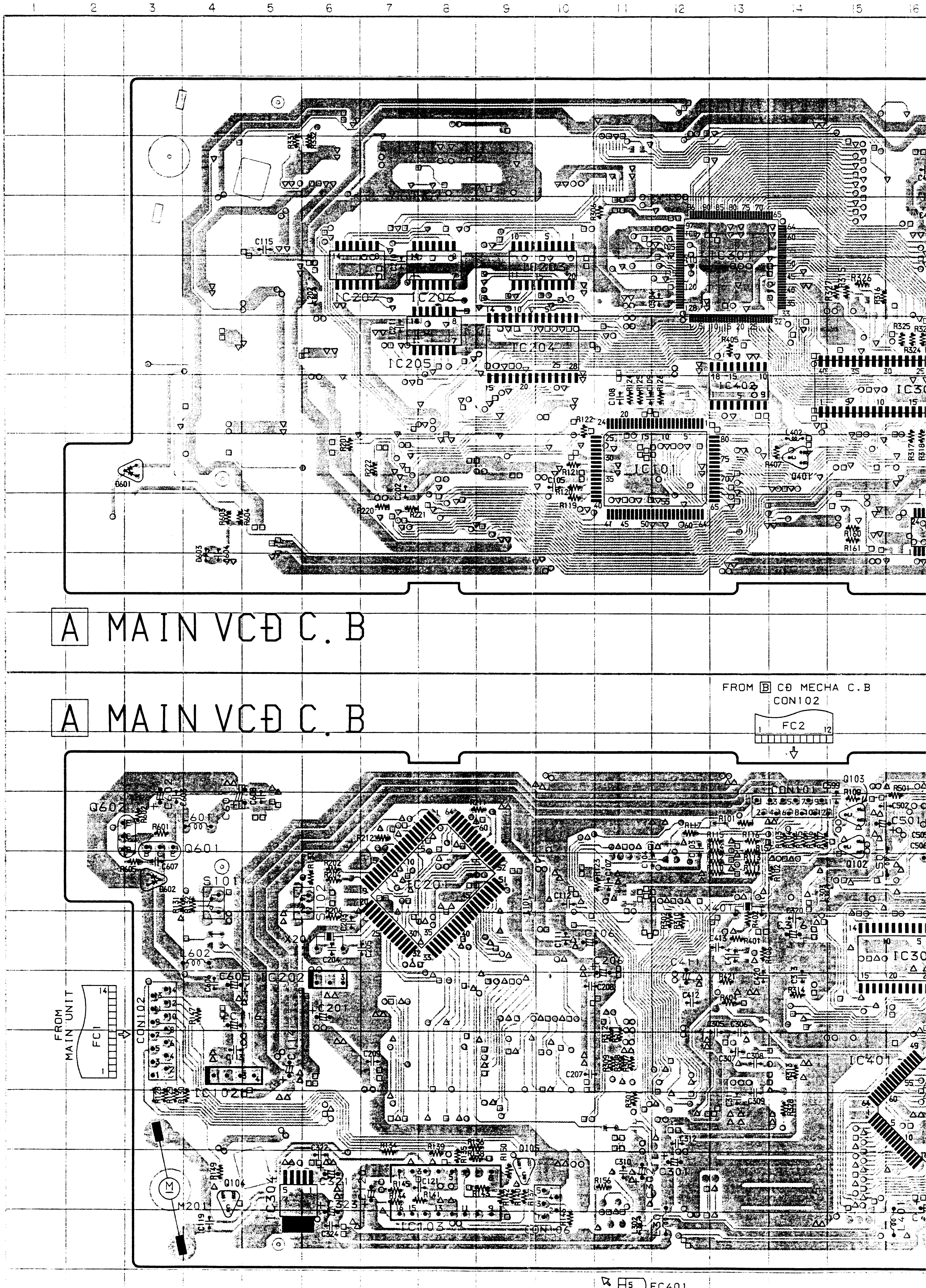


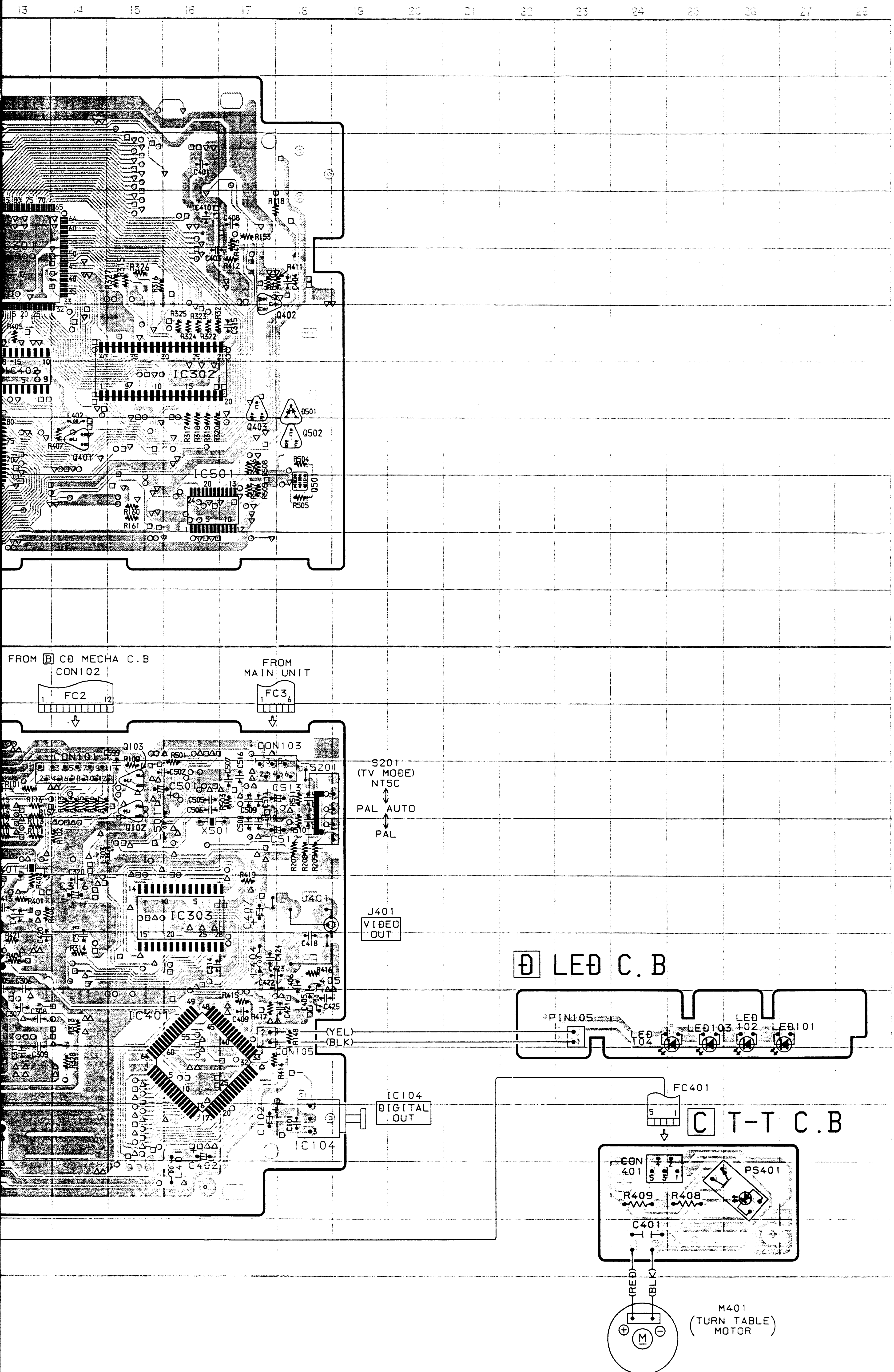


F VCD C.B

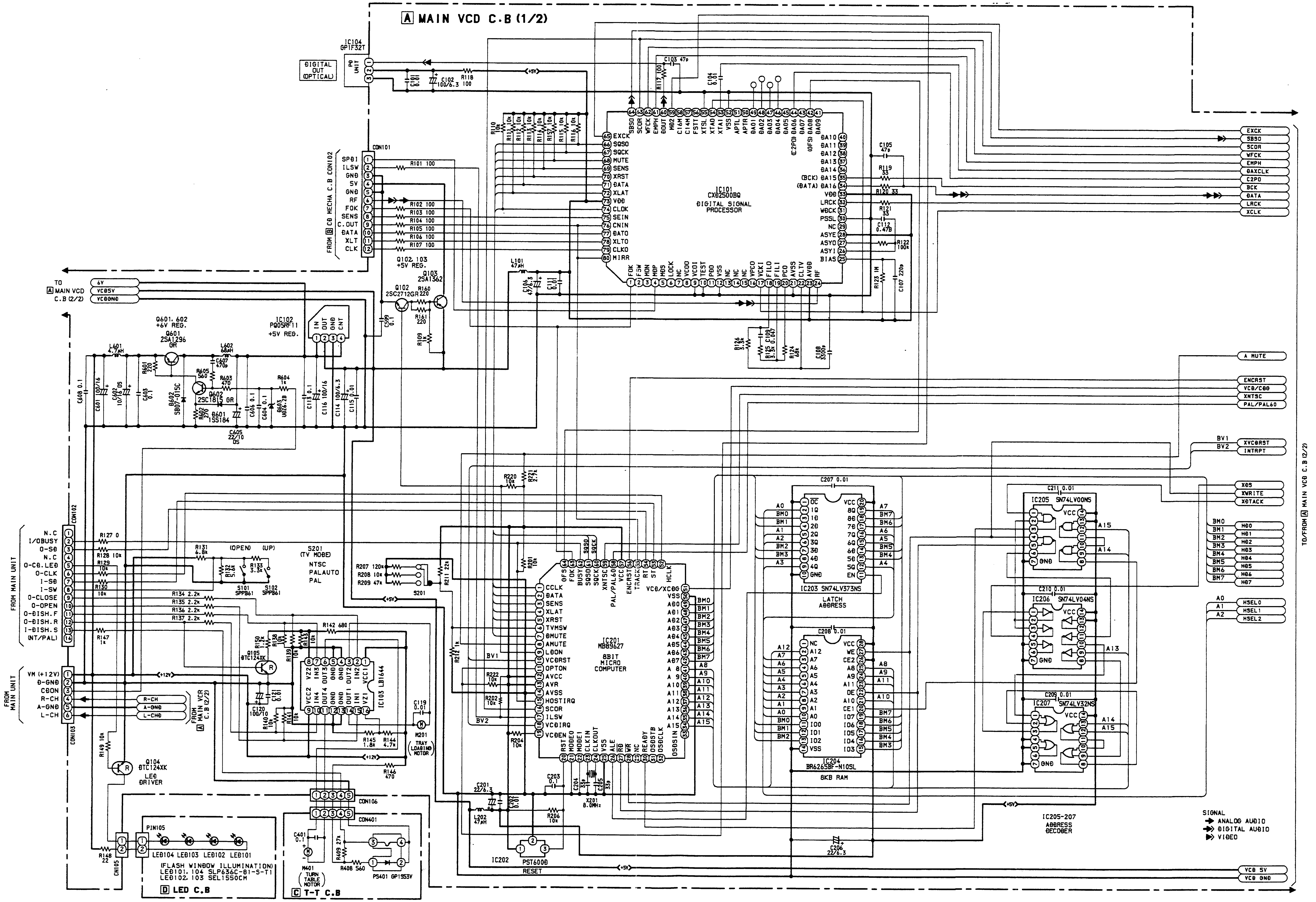

A
B
C
D
E
F
G
H
I
J
K
L
U15
U8
U19
U14
U2
U1
U18
U3
Q1
C
B
E
C160
C161
CT1
C1002
C96
C95
C94
C93
C92
C91

WIRING-6 (V5: MAIN VCD)

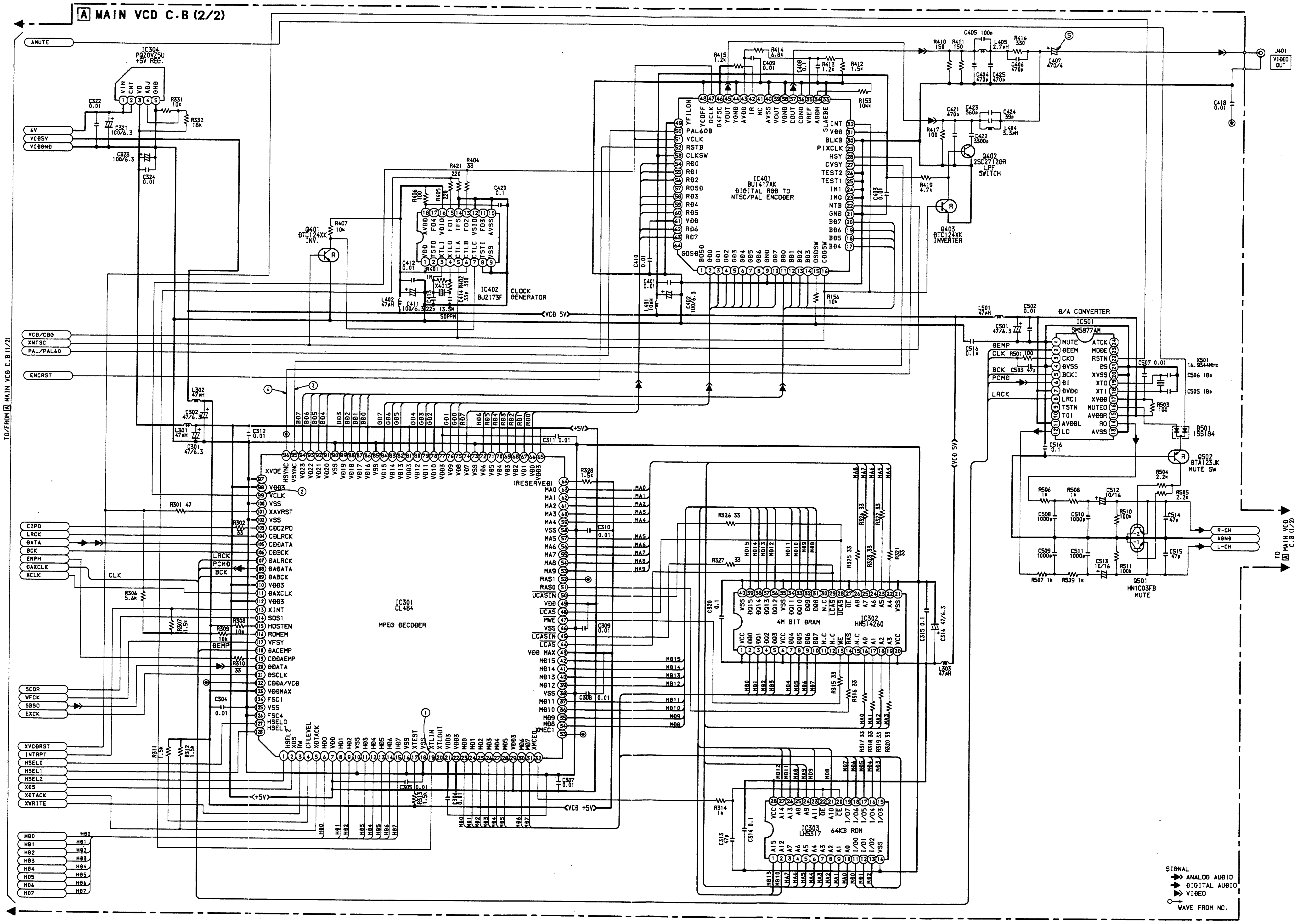

1
2
3
4
5
6
7
8
9
10
11
12
13
14
15
16
A MAIN VCD C.B
A MAIN VCD C.B
FROM B CD MECHA C.B
CON102
FC2
IC301
IC207
IC206
IC205
IC204
IC402
IC101
Q601
Q401
C115
IC201
IC202
IC102
IC103
IC304
IC401
CON102
FROM MAIN UNIT
FC1
CON101
Q103
Q102
Q104
Q105
M201
S101
X201
X401
L601
L602
FC401
CON106


13
14
15
16
17
18
19
20
21
22
23
24
25
26
27
28
IC301
IC302
IC402
IC501
Q401
Q402
Q403
Q501
Q502
R118
R153
R411
R412
C401
C403
C404
C408
C410
R326
R325
R323
R324
R322
C315
R317
R318
R319
R320
L402
R407
R160
R161
R504
R505
R405
FROM B CD MECHA C.B
CON102
FC2
FROM
MAIN UNIT
FC3
CON101
CON103
Q102
Q103
R101
R501
C501
C502
C505
C506
C507
C508
C509
C516
C512
C513
X501
S201
R207
R208
R209
S201
(TV MODE)
NTSC
PAL AUTO
PAL
IC303
J401
VIDEO
OUT
C407
C418
C422
R419
R416
R415
R417
C409
IC401
R148
(YEL)
(BLK)
CON105
C402
C102
C101
IC104
IC104
DIGITAL
OUT
D LED C.B
PIN105
LED 104
LED103
LED 102
LED101
FC401
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401
(TURN TABLE
MOTOR)
M

SCHEMATIC DIAGRAM-9 (V5: MAIN VCD 1/2)


A MAIN VCD C.B (1/2)
IC104 GP1F32T
DIGITAL OUT (OPTICAL)
CON101
FROM B CD MECHA C.B CON102
IC101 CXD2500BQ DIGITAL SIGNAL PROCESSOR
TO A MAIN VCD C.B (2/2)
Q601, 602 +6V REG.
IC102 PQ05RF11 +5V REG.
Q102, 103 +5V REG.
CON102
FROM MAIN UNIT
S201 (TV MODE) NTSC PALAUTO PAL
IC201 MB89627 8BIT MICRO COMPUTER
IC203 SN74LV373NS LATCH ADDRESS
IC204 BR6265BF-N10SL 8KB RAM
IC205 SN74LV00NS
IC206 SN74LV04NS
IC207 SN74LV32NS
IC205-207 ADDRESS DECODER
IC103 LB1644
M201 TRAY LOADING MOTOR
Q104 DTC124XK LED DRIVER
CON103
FROM A MAIN VCR C.B (2/2)
CON106
CON401
CON105
PIN105
LED104 LED103 LED102 LED101
(FLASH WINDOW ILLUMINATION) LED101, 104 SLP636C-01-5-T1 LED102, 103 SEL1550CM
D LED C.B
M401 TURN TABLE MOTOR
PS401 GP1S53Y
C T-T C.B
IC202 PST600D RESET
X201 8.0MHz
TO/FROM A MAIN VCD C.B (2/2)
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO

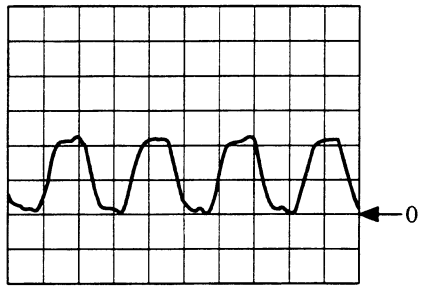
SCHEMATIC DIAGRAM-10 (V5: MAIN VCD 2/2)


A MAIN VCD C.B (2/2)
TO/FROM A MAIN VCD C.B (1/2)
TO A MAIN VCD C.B (1/2)
AMUTE
IC304 PQ20VZ5U +5V REG.
6V
VCD5V
VCDGND
VCD/CDG
XNTSC
PAL/PAL60
ENCRST
C2PO
LRCK
DATA
BCK
EMPH
DAXCLK
XCLK
SCOR
WFCK
SBSO
EXCK
XVCDRST
INTRPT
HSEL0
HSEL1
HSEL2
XDS
XDTACK
XWRITE
HD0
HD1
HD2
HD3
HD4
HD5
HD6
HD7
Q401 DTC124XK INV.
IC402 BU2173F CLOCK GENERATOR
IC401 BU1417AK DIGITAL RGB TO NTSC/PAL ENCODER
Q402 2SC2712GR LPF SWITCH
Q403 DTC124XK INVERTER
J401 VIDEO OUT
D/A CONVERTER
IC501 SM5877AM
X501 16.9344MHz
D501 1SS184
Q502 DTA123JK MUTE SW
Q501 HN1C03FB MUTE
R-CH
AGND
L-CH
IC301 CL484 MPEG DECODER
IC302 HM514260 4M BIT DRAM
IC303 LH5317 64KB ROM
VCD 5V
+5V
VCD +5V
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
WAVE FROM NO.

WAVE FORM

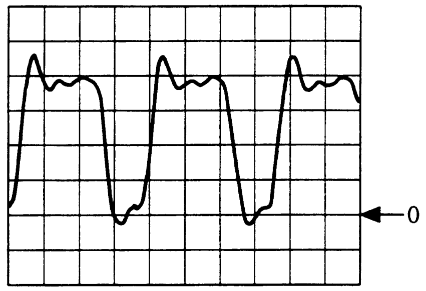
①
IC301 Pin ⑲ (GCK)
40.5MHz
VCD PLAY
TV MODE: • NTSC
• PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS



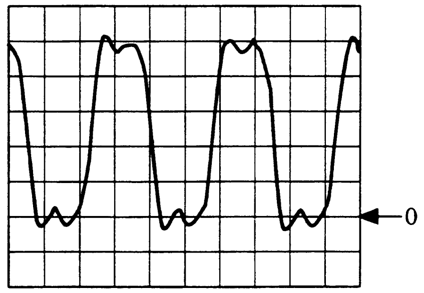
②
IC301 Pin (99) (VCLK)
27MHz±1350Hz
VCD PLAY
TV MODE: • NTSC
• PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS



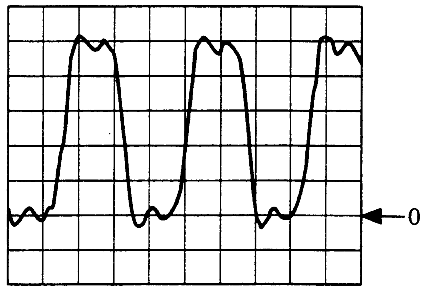
28.375MHz
CDG PLAY
TV MODE: • PAL
• PAL AUTO

VOLT/DIV: 1V
TIME/DIV: 10nS

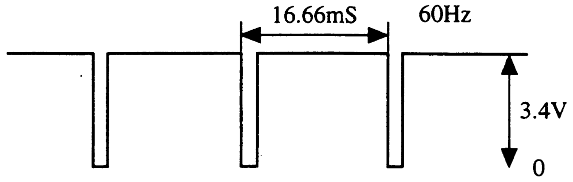


28.6363MHz
CDG PLAY
TV MODE: • NTSC

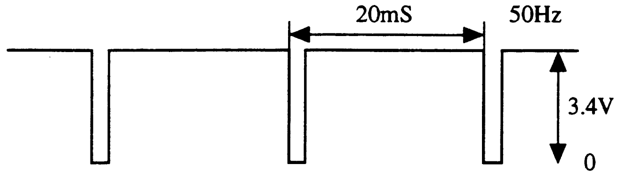
VOLT/DIV: 1V
TIME/DIV: 10nS



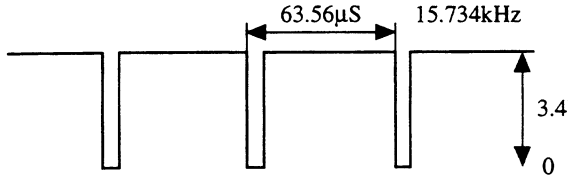
③
IC301 Pin (95) (V SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO


16.66mS
60Hz
3.4V
0

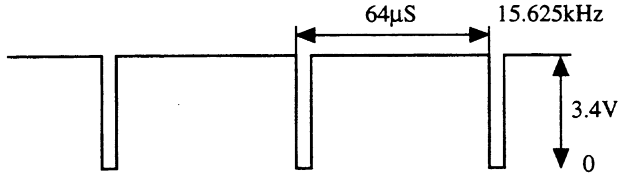
VCD, CDG PLAY
TV MODE: PAL


20mS
50Hz
3.4V
0

④
IC301 Pin (96) (H SYNC)
VCD, CDG PLAY
TV MODE: • NTSC
• PAL AUTO

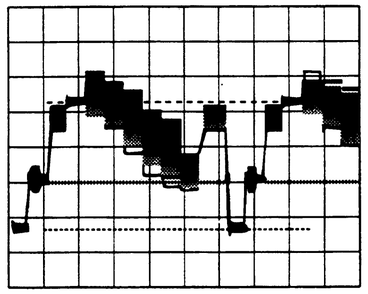

63.56µS
15.734kHz
3.4V
0

VCD, CDG PLAY
TV MODE: PAL


64µS
15.625kHz
3.4V
0

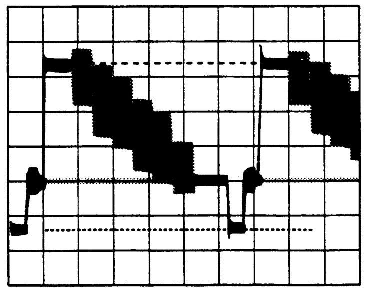
⑤
VIDEO OUT
C407 ⊖ side
CDG PLAY: CD-T03 TRACK2
TV MODE:• NTSC

VOLT/DIV: 200mV
TIME/DIV: 10µS

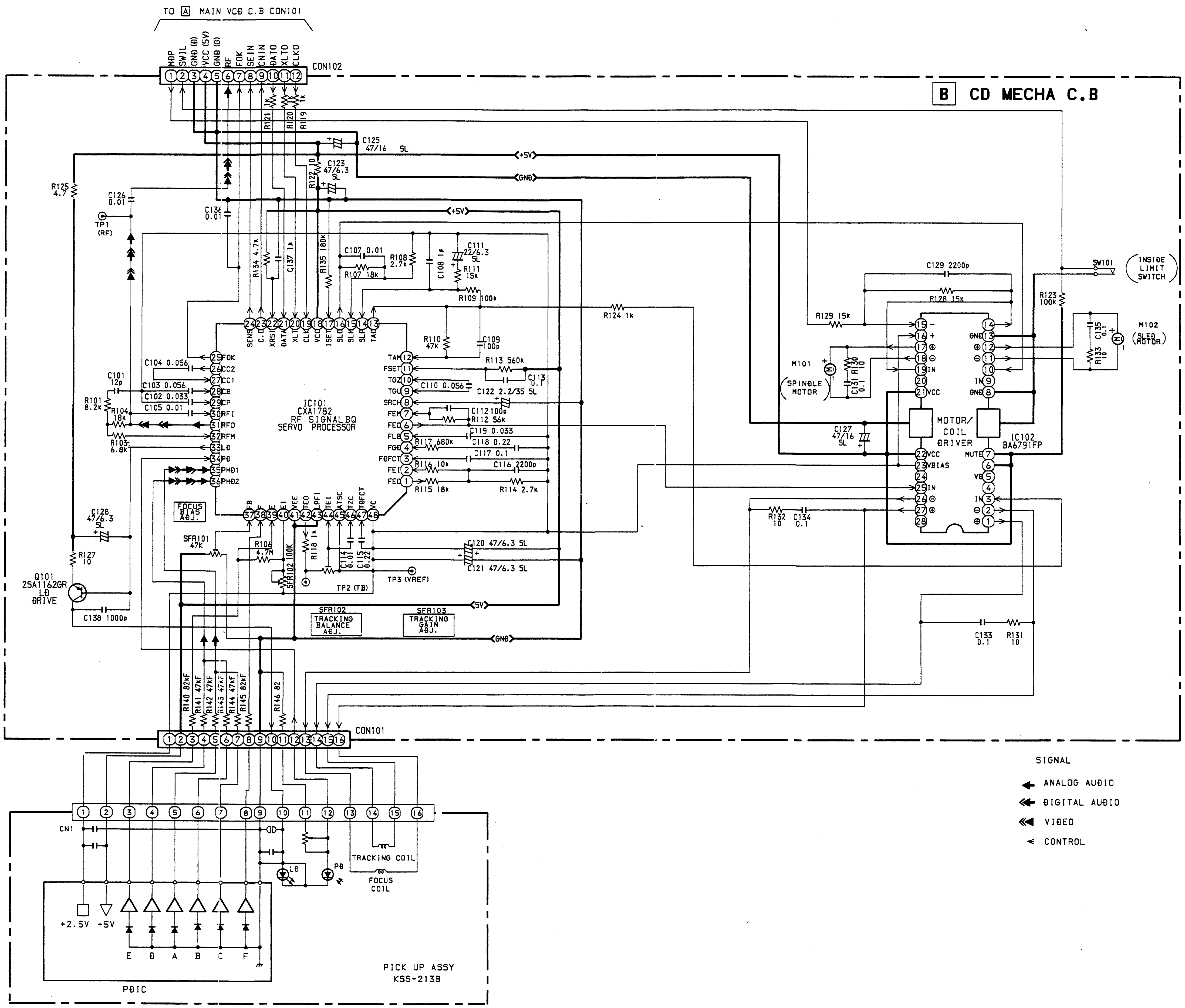


VCD PLAY: CD-T05 TRACK4
TV MODE:• NTSC

VOLT/DIV: 200mV
TIME/DIV: 10µS

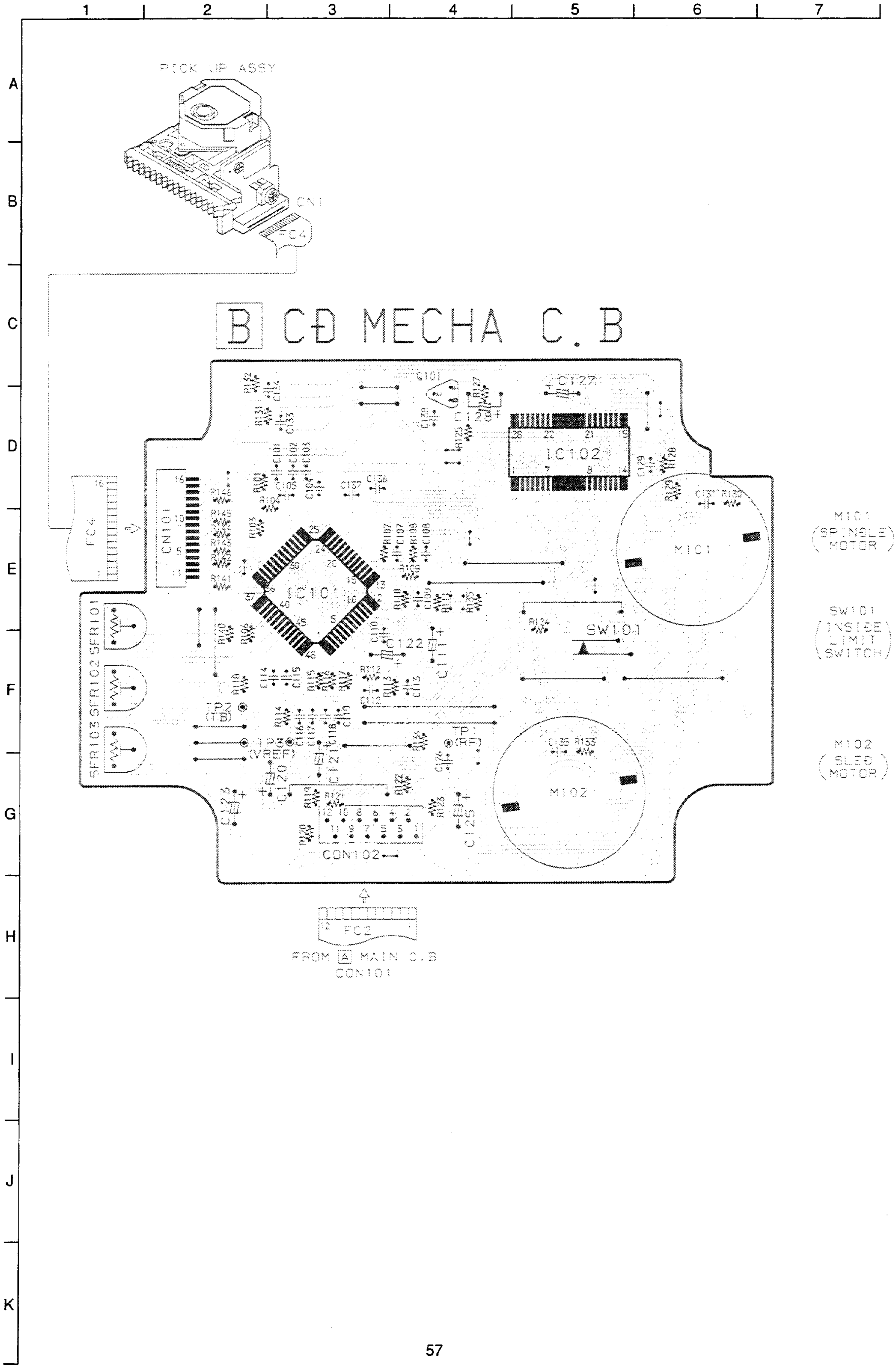


SCHEMATIC DIAGRAM-11 (V5: CD MECHA)



TO A MAIN VCD C.B CON101
MDP
SWIL
GND (D)
VCC (5V)
GND (G)
RF
FOK
SEIN
CNIN
DATO
XLTO
CLKO
CON102
B CD MECHA C.B
C125 47/16 5L
+5V
GND
C123 47/6.3 5L
R121 1k
R120 1k
R119 1k
R122 10
R125 4.7
C126 0.01
TP1 (RF)
C136 0.01
R134 4.7k
C137 1p
R135 180k
C107 0.01
R108 2.7k
R107 18k
C108 1p
C111 22/6.3 5L
R111 15k
R109 100k
R124 1k
R110 47k
C109 100p
R113 560k
C113 0.1
C110 0.056
C122 2.2/35 5L
C112 100p
R112 56k
C119 0.033
R117 680k
C118 0.22
C117 0.1
R116 10k
C116 2200p
R115 18k
R114 2.7k
C104 0.056
C101 12p
C103 0.056
C102 0.033
C105 0.01
R101 8.2k
R104 18k
R103 6.8k
IC101 CXA1782 RF SIGNAL BQ SERVO PROCESSOR
FOCUS BIAS ADJ.
C128 47/6.3 5L
R127 10
Q101 2SA1162GR LD DRIVE
C138 1000p
SFR101 47K
R106 4.7M
SFR102 100K
R118 1k
C114 0.01
C115 0.22
C120 47/6.3 5L
C121 47/6.3 5L
TP2 (TB)
TP3 (VREF)
5V
SFR102 TRACKING BALANCE ADJ.
SFR103 TRACKING GAIN ADJ.
R140 82kF
R141 47kF
R142 47kF
R143 47kF
R144 47kF
R145 82kF
R146 82
CON101
C129 2200p
R128 15k
R129 15k
R123 100k
SW101
INSIDE LIMIT SWITCH
M101
SPINDLE MOTOR
R130 10
C131 0.1
M102
SLED MOTOR
C135 0.1
R133 10
C127 47/16 5L
MOTOR/ COIL DRIVER
IC102 BA6791FP
MUTE
R132 10
C134 0.1
C133 0.1
R131 10
CN1
LD
PD
TRACKING COIL
FOCUS COIL
+2.5V
+5V
E
D
A
B
C
F
PDIC
PICK UP ASSY KSS-213B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL

WIRING-7 (V5: CD MECHA)


1
2
3
4
5
6
7
A
B
C
D
E
F
G
H
I
J
K
PICK UP ASSY
CN1
FC4
B CD MECHA C.B
IC101
IC102
CN101
SFR101
SFR102
SFR103
SW101
M101
M102
TP1 (RF)
TP2 (TB)
TP3 (VREF)
CON102
C122
C127
C128
C120
C121
C123
C125
C111
M101 (SPINDLE MOTOR)
SW101 (INSIDE LIMIT SWITCH)
M102 (SLED MOTOR)
FC2
FROM A MAIN C.B CON101

IC DESCRIPTION

IC, CXD2500BQ

Pin No.	Pin Name	I/O	Description
1	FOK	I	Focus OK input terminal. Used for SENS output and servo auto sequencer.
2	FSW	O	Spindle motor output filter selection output.
3	MON	O	Spindle motor ON-OFF control output.
4	MDP	O	Spindle motor servo control.
5	MDS	O	Spindle motor servo control.
6	LOCK	O	H output when GFS is sampled at 460 Hz and GFS is H. L output when L is continuously 8 times.
7	NC	—	Not used.
8	VCOO	O	Oscillator circuit output for analog EFM PLL.
9	VCOI	I	Oscillator circuit input for analog EFM PLL. fLOCK = 8.6436 MHz.
10	TEST	I	TEST terminal. Normally GND.
11	PDO	O	Charge pump output for analog EFM PLL.
12	VSS	—	GND.
13	NC	—	Not used.
14	NC	—	Not used.
15	NC	—	Not used.
16	VPCO	O	Charge pump output for vari-pitch PLL.
17	VCKI	I	Clock input from external VCO for vari-pitch. fc center = 16.9344 MHz.
18	FILO	O	Filter output for master PLL (slave = digital PLL).
19	FILI	I	Filter input for master PLL.
20	PCO	O	Charge pump output for
21	AVSS	—	Analog GND.
22	CLTV	I	VCO control voltage input for master.
23	AVDD	—	Analog power supply. (+3.5 V)
24	RF	I	EFM signal input.
25	BIAS	I	Asymmetry circuit constant current input.
26	ASYI	I	Asymmetry comparate voltage input.
27	ASYO	O	EFM full swing output (L = Vss, H = VDD.)
28	ASYE	I	L: asymmetry circuit OFF, H: asymmetry circuit ON.
29	NC	—	Not used.
30	PSSL	I	Audio data output mode selection input. Serial output at L, parallel output at H.
31	WDCK	O	D/A interface for 48-bit slot. Word clock f = 2 Fs.
32	LRCK	O	D/A interface for 48-bit slot. LR clock f = Fs.
33	VDD		Power supply. (+3.5 V)
34	S DATA	O	DA16 (MSB) output when PSSL = H. 48-bit slot serial data when PSSL = L. (2's COMP, MSB first).
35	BCLK	O	DA15 output when PSSL = H. 48-bit slot bit clock when PSSL = L.
36	NC	O	DA14 output when PSSL = H. 64-bit slot serial data when PSSL = L. (2's COMP, MSB first).
37	NC	O	DA13 output when PSSL = H. 64-bit slot bit clock when PSSL = L.
38	NC	O	DA12 output when PSSL = H. 64-bit slot LR clock when PSSL = L.

Pin No.	Pin Name	I/O	Description
39	GTOP	O	DA11 output when PSSL = H. GTOP output when PSSL = L.
40	XUGF	O	DA10 output when PSSL = H. XUGF output when PSSL = L.
41	XPLCK	O	DA09 output when PSSL = H. XPLCK output when PSSL = L.
42	GFS	O	DA08 output when PSSL = H. GFS output when PSSL = L.
43	RFCK	O	DA07 output when PSSL = H. RFCK output when PSSL = L.
44	C2PO	O	DA06 output when PSSL = H. C2P0 output when PSSL = L.
45	XRAOF	O	DA05 output when PSSL = H. XRAOFoutput when PSSL = L.
46	MNT3	O	DA04 output when PSSL = H. MNT3 output when PSSL = L.
47	MNT2	O	DA03 output when PSSL = H. MNT2 output when PSSL = L.
48	MNT1	O	DA02 output when PSSL = H. MNT1 output when PSSL = L.
49	MNT0	O	DA01 output when PSSL = H. MNT0 output when PSSL = L.
50	APTR	O	Aperture correction control output. H when R channel.
51	APTL	O	Aperture correction control output. H when L channel.
52	VSS	—	GND.
53	XTAI	I	Input to 16.9344 MHz X'tal oscillator circuit. or 33.8688 MHz input.
54	XTAO	O	16.9344 MHz X'tal oscillator output.
55	XTSL	I	X'tal selection input. L when X'tal is 16.9344 MHz. H when 33.8688 MHz.
56	FSTT	O	2/3 divider output of the pins 53 and 54. Does not change with vari-pitch.
57	C4M	O	4.2336 MHz output. When vari-pitch is performed, it changes too.
58	C16M	O	16.2336 MHz output. When vari-pitch is performed, it changes too.
59	MD2	I	Digital-out ON/OFF control. ON at H, OFF at L.
60	DOUT	O	Digital-out terminal.
61	EMPH	O	H output when the playback disc has emphasis. L output without emphasis.
62	WFCK	O	WFCK (Write Frame Clock) output.
63	SCOR	O	H output when S0 or S1 of the subcode sync is detected.
64	SBSO	O	Serial output of Sub P to W.
65	EXCK	I	Clock input for SBSO read out.
66	SQSO	O	SubQ 8-bit and PCM peak level data. 16-bit output.
67	SQCK	I	Clock input for SQSO readout.
68	MUTE	I	Mute at H. Release at L.
69	SENS	O	SENS output. Output to CPU.
70	XRST	I	System reset. Reset at L.
71	DATA	I	Serial data input from CPU.
72	XLAT	I	Latch input from CPU. Latches serial data at fall-down edge.
73	VDD	—	Power supply (+3.5 V).
74	CLOK	I	Serial data transfer clock input from CPU.
75	SEIN	I	Sensor input from SSP.
76	CNIN	I	Track jump number counted signal input.
77	DATO	O	Serial data output to SSP.
78	XLTO	O	Serial data latch output to SSP. Latches at fall-down edge.
79	CLKO	O	Serial data transfer clock output to SSP.
80	MIRR	I	Mirror signal input. Used for jump of 128 track or more at auto sequencer.

IC, µPD78044BGF

Pin No.	Pin Name	I/O	Description
1	DO ON	O	Digital output. ON/OFF output.
2~7	NC	—	Not used.
8	VDD	—	PWR. +5 V power supply.
9	CM CLK	I/O	Serial clock I/O.
10	C DATA	O	Serial data output.
11	M DATA	I	Serial data input.
12	O-CLK	O	DSP serial clock output.
13	O-XLT	O	DSP serial latch output.
14	O-SQCLK	O	DSP sub Q read-out clock output.
15	O-DATA	O	DSP serial data output.
16	I-SQDATA	I	DSP sub Q data input.
17	$\overline{\text{RESET}}$	I	System reset input.
18	I-SENS	I	DSP SENS input.
19	XRST	O	CD system reset output.
20	AVSS	—	PWR. GND potential of A/D converter input.
21	I-FOK	I	ASP FOK input.
22	I-GFS	I	DSP GFS input.
23	—	—	Connected GND.
24	I-ILSW	I	Pickup limit switch input.
25	I-OCSW	I	Tray OPEN/CLOSE switch input.
26~28	—	—	Connected GND.
29	AVDD	—	PWR. Analog power supply of A/D converter input.
30	AVREF	I	PWR. Reference voltage input of A/D converter input.
31	—	—	Connected GND.
32	NC	—	Open terminal.
33	VSS	—	PWR. GND potential.
34	X1	I	CLK. Terminal for 4.19 MHz clock oscillator.
35	X2	O	CLK. Terminal for 4.19 MHz clock oscillator.
36~38	NC	—	Not used.
39	$\overline{\text{C-BUSY}}$	O	MPEG status output.
40	MSTBY	I	Main microprocessor status input.
41	CLOCK	O	Main microprocessor serial clock output.
42	DATA	O	Main microprocessor serial data output.
43	D-REQ	O	Main microprocessor status output.
44	I-KEY	I	Main microprocessor serial data input.
45	SCOR	I	DSP SCOR input.
46	$\overline{\text{M-BUSY}}$	I	MPEG status signal input.
47	—	—	Connected GND.
48	IC	—	PWR. Connected to Vss.
49	MUTE L	O	L channel analog mute output.
50	MUTE R	O	R channel analog mute output.

Pin No.	Pin Name	I/O	Description
51	DSENS	I	Turntable sensor input.
52	VDD	—	PWR. +5 V power supply.
53~64	NC	—	Not used.
65	O-TOPN	O	Tray OPEN output.
66	O-CLS	O	Tray CLOSE output.
67	O-DFWD	O	Turntable forward rotation output.
68	O-DRVS	O	Turntable reverse rotation output.
69, 70	NC	—	Not used.
71	VLOAD	—	PWR. -27 V power supply for FL pull-down.
72~76	NC	—	Not used.
77	VCD	O	VIDEO CD selection output.
78	$\overline{\text{CD FUNC}}$	O	CD function selection output.
79	G-MUT	O	CDG mute output.
80	CD ON	O	FL. Digit output for FL display.

IC, LC7872E

Pin No.	Pin name	I/O	Description
1, 2	S1, S2	—	DSP select pin for CD. (Connected to VDD)
3	SBCK	O	Subcode read/write clock.
4	SFSY	I	Subcode frame sync signal.
5	PW	I	Subcode read/write data.
6	SBSY	I	Subcode block sync signal.
7	VDD1	—	Power supply for digital block. (Connected to +5V)
8	CE	I	Control pin when serial input or serial output. (Connected to GND)
9	DO	O	Serial data output. (Connected to GND)
10	DI	I	Serial data input. (Connected to GND)
11	CL	I	Clock when inputting/outputting serial data. (Connected to GND)
12	MUTE	I	Control signal disabling the subcode.
13	VSS1	—	GND for digital block.
14	$\overline{\text{WE}}$	O	DRAM control pin.
15	$\overline{\text{RAS}}$	O	DRAM control pin.
16~23	A0~A7	O	DRAM address pin.
24	DB0	I/O	DRAM data pin.
25	$\overline{\text{CAS}}$	O	DRAM control pin.
26	DB1	I/O	DRAM data pin.
27	$\overline{\text{DE}}$	O	DRAM control pin.
28	DB2	I/O	DRAM data pin.
29	DB3	I/O	DRAM data pin.
30	CE	I	"L": Normal mode "H": Color bar output (Not used)
31	CDGM	O	"H" output when CDG disk. (Not used)
32	TRANS0	O	Transparency digital output. (Not used)
33	TRANS1	O	Transparency digital output. (Not used)
34	TRANS2	O	Transparency digital output. (Not used)
35	TRANS3	O	Transparency digital output. (Not used)
36	TRANS4	O	Transparency digital output. (Not used)
37	TRANS5	O	Transparency digital output. (Not used)
38	VSS2	—	Composite video DAC GND pin.
39	VDD2	—	Composite video DAC power supply pin. (Connected to +5V)
40	BIAS	O	Capacitor connecting pin for eliminating ripple.
41	VIDEO	O	Composite video output pin (8-bit DAC output).
42	TEST	I	Test pin. Set to "L" normally. (Connected to GND)
43	LINE	I	When NP2 pin is "H": H: 263H L: 262H When NP2 pin is "L": H: 312H L: 314H (Not used)
44	FSCIN	I	Subcarrier clock input pin. (feedback resistor is built in) (Connected to GND)
45	VSYNC	O	Vertical sync signal output pin. (Not used)
46	TEST1	I	Test pin. Set to "L" normally. (Connected to GND)
47	YS	O	Superimpose control output. (Not used)
48	$\overline{\text{CSTNC}}$	O	Composite sync signal output. (Not used)

Pin No.	Pin name	I/O	Description
49	GND	—	GND.
50	EFLG	O	Error status monitor pin. (Not used)
51	FSX	O	For error status monitor trigger. (Not used)
52	DEN	I	Disk information display enable. H: BGC L: Enable (Connected to GND)
53	PALID	I	External control pin when superimposing with PAL (pull-up resistor is built in). (Not used)
54	VDD3	—	Digital power supply (+5V)
55	FSC	O	Subcarrier clock output. NTSC mode: 3.579545 MHz PAL mode: 4.433619 MHz (Not used)
56	VDD4	—	Digital power supply (+5V)
57	$\overline{\text{RESET}}$	I	Reset input pin.
58	N/$\overline{\text{P}}$1	I	NTSC/PAL selection pin. (RGB encoder) "H": NTSC "L": PAL
59	N/$\overline{\text{P}}$2	I	NTSC/PAL selection pin. (CD-G decoder) "H": NTSC "L": PAL
60	SON	I	Superimpose ON/OFF pin. (Connected to GND)
61	XIN2	I	Crystal oscillator 17.734476 MHz. (for PAL)
62	XOUT2	O	Crystal oscillator 17.734476 MHz. (for PAL)
63	XIN1	I	Crystal oscillator connection 14.31818 MHz. (for NTSC)
64	XOUT1	O	Crystal oscillator connection 14.31818 MHz. (for NTSC)

IC, CXA1782BQ

Pin No.	Pin name	I/O	Description
1	FEO	O	Focus error amplifier output pin. This pin is connected to the FZC comparator input internally.
2	FEI	I	Focus error input pin.
3	FDFCT	I	Capacitor connection pin for time constant used when there is defect.
4	FGD	I	This pin is connected to GND via capacitor when high frequency gain of the focus servo is attenuated.
5	FLB	I	This is a pin where the time constant is externally connected to raise the low frequency gain of the focus servo.
6	FEO	O	Focus drive output.
7	FEM	I	Focus amplifier inverted input pin.
8	SRCH	I	This is a pin where the time constant is externally connected to generate the focus search waveform.
9	TGU	I	This is a pin where the selection time constant is externally connected to set the tracking servo the high frequency gain.
10	TG2	I	This is a pin where the selection time constant is externally connected to set the tracking high frequency gain.
11	FSET	I	Pin for setting peak of the phase compensator of the focus tracking.
12	TAM	I	Tracking amplifier inverted input pin.
13	TAO	O	Tracking drive output.
14	SLP	I	Sled amplifier non-inverted input pin.
15	SLM	I	Sled amplifier inverted input pin.
16	SLO	O	Sled drive output.
17	ISET	I	The current which determines height of the focus search, track jump and sled kick is input.
18	VCC	—	+ 5 V power supply pin.
19	CLK	I	Serial data transfer clock input from CPU.
20	XLT	I	Latch input from CPU.
21	DATA	I	Serial data input from CPU .
22	XRST	I	Reset input pin. Reset at L.
23	COUT	O	Signal output to count the number of tracks.
24	SENS	O	FZC, DFCT, TZC, Gain or BAL is output depending on the command from CPU .
25	FOK	O	Output pin of the focus OK comparator.
26	CC2	O	Input pin where the DEFECT bottom hold output is capacitance coupled.
27	CC1	I	DEFECT bottom hold output pin.
28	CB	I	This is a pin where the DEFECT bottom hold capacitor is connected.
29	CP	I	This is a pin where the MIRR hold capacitor is connected and MIRR comparator non-inverted signal is input.
30	RFI	I	Input pin where the RF summing amplifier output is capacitance coupled.
31	RFO	O	RF summing amplifier output pin. (Eye pattern check point)
32	RFM	I	RF summing amplifier inverted input pin. Gain of RF amplifier is determined by the resistor connected between RFO and this pin.

Pin No.	Pin name	I/O	Description
33	LD	O	APC amplifier output pin.
34	PHD	I	APC amplifier input pin.
35~36	PHD1~2	I	RF I-V amplifier inverted input pin. These pins are connected to the A+C and B+D pins of the optical pickup.
37	FE BIAS	I	Bias adjustment pin of the focus error amplifier.
38~39	F~E	I	F and E IV amplifier non-inverted input pins. These pins are connected to the F and E of the optical pickup.
40	EI	—	Gain adjustment pin of the I-V amplifier E.
41	VEE	—	GND connection pin
42	TEO	O	Tracking error amplifier output pin. E-F signal is output.
43	LPFI	I	BAL adjustment comparator input pin.
44	TEI	I	Tracking error input pin.
45	ATSC	I	Window comparator input pin for detecting ATSC.
46	TZC	I	Tracking zero-cross comparator input pin.
47	TDFCT	I	Capacitor connection pin for the time constant used when there is defect.
48	VC	O	DC voltage output pin of VREF. (VDD/2)

IC, CL480

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11~15	HD3~HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23~28	MD0~MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34~37	MD8~MD11	I/O	Memory data bus.
38	VSS	—	GND.
39~42	MD12~MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53~57	MA9~MA5	O	Memory address bus.
58	VSS	—	GND.
59~63	MA4~MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66~72	VD0~VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS		GND.
74~76	VD7~VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
78~80	VD10~VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3		Power supply pin. Used in 3.3 V.
82~84	VD13~VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	—	GND.
86~89	VD16~VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	—	GND.
91~94	VD20~VD23	O	Pixel data bus. RGB or YCbCr format.
95	-VSYNC or CSY	I/O	Vertical sync signal.
96	-HSYNC	I/O	Horizontal sync signal.
97	-VOE	I	Video output enable.
98	VDD3	—	Power supply pin. Used in 3.3 V.
99	VCLK	I/O	Video clock.
100	VSS	—	GND.
101	-RESET	I	Hardware reset.
102	VSS	—	GND.
103	CD-C2PO	I	Data error. Used during CD-ROM data input.
104	CD-LRCK	I	LR clock.
105	CD-DATA	I	Serial data input from CD-DSP.
106	CD-BCK	I	Bit clock from CD decoder.
107	DA-LRCK	O	LR clock.
108	DA-DATA	O	Bit serial audio sample signal.
109	DA-BCK	O	Audio bit clock.
110	VDD3	—	Power supply pin. Used in 3.3 V.
111	DA-XCLK	I	External audio frequency clock.
112	VDD3	—	Power supply pin. Used in 3.3 V.
113	-INT	O	Interrupt request.
114	RESERVED	—	Reserved.
115	HOST_ENA	I	Host enable.
116	RAM_ENA	I	Boot ROM enable.
117	RESERVED	—	Reserved.
118	DAC_EMP	O	Output emphasis flag.
119	CDDA_EMP	I	Input emphasis flag.
120	RESERVED	—	Reserved.
121	-FMV_DET	O	FMV detection. L: FMV detected.
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD.
123	VDDMAX	I	Power supply pin. Used in 5.0 V.
124	RESERVED	—	Reserved.
125	VSS	—	GND.
126	RESERVED	—	Reserved.
127, 128	HSEL0, HSEL1	I	Host address bus.

IC, CXD1178Q

Pin No.	Pin Name	I/O	Description
1~8	R0~R7	I	Digital input.
9~16	G0~G7		
17~24	B0~B7		
25	BLK	I	Blanking pin. No signal at "H" (Output 0V). Output condition at "L".
26	$\overline{\mathrm{CE}}$	I	Chip enable pin. No signal (Output 0V) at "H" and minimizes power consumption.
27	RCK	I	Clock pin. Moreover all input pins are TTL-CMOS compatible.
28	GCK		
29	BCK		
30, 31	DVSS	—	Digital GND.
32	VB	O	Connect a capacitor of about 0.1µF.
33	AVSS	—	Analog GND.
34	VREF	I	Set full scale output value.
35	IREF	I	Connect a resistance 16 times "16R" that of output resistance value "R".
36	$\overline{\mathrm{RO}}$	O	Inverted current output pin. Normally dropped to analog GND.
37	RO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
38	$\overline{\mathrm{GO}}$	O	Inverted current output pin. Normally dropped to analog GND.
39	GO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
40	$\overline{\mathrm{BO}}$	O	Inverted current output pin. Normally dropped to analog GND.
41	BO	O	Current output pin. Voltage output can be obtained by connecting a resistance.
42	VG	I	Connect a capacitor of about 0.1µF.
43~46	AVDD	—	Analog VDD.
47, 48	DVDD	—	Digital VDD.

IC, MC68HC705

Pin No.	Pin Name	I/O	Description
1	RST	I	Reset.
2	IRQ	I	MPEG DECODER request signal.
3	VPP	—	ROM write power.
4~11	PA7~PA0	I/O	MPEG DECODER data bus 7~0.
12~14	PB0~PB2	O	MPEG DECODER register select 0~2.
15	PB3	O	MPEG DECODER data R/W select.
16	PB4	O	MPEG DECODER data strobe.
17	PB5	I	MPEG DECODER data acknowledge.
18	PB6	I	CD-I bit stream detect.
19	PB7	I	CD DA/VCO select.
20	VSS	—	Power ground.
21	PC7	I	MPEG DECODER FIFO status.
22, 23	PC6, PC5	—	Not used.
24	PC4	O	MPEG DECODER reset signal.
25, 26	PC3, PC2	—	Not used.
27, 28	PC1, PC0	O	Key scan out 1, 0.
29	RDI	—	Not used.
30	TD$\overline{O}$		
31~34	PD2~PD5	I	Key scan input 0~3.
35	TCMP	O	Remote data out.
36	PD7	—	Not used.
37	CAP	I	Remote data in.
38, 39	OSC2, OSC1	I	X_tal in.
40	VDD	—	Power 5V.

IC, µPD6376

Pin No.	Pin Name	I/O	Description
1	FS-SEL	I	As this terminal is "Low" or open, L-ch data and R-ch data are inputted for serial data by the pin 15. As this terminal is "High", L-ch data is inputted by the pin 15, R-ch data is inputted by the pin 14. (Pull-downed by the 100 kΩ resistance in IC.)
2	D. GND	—	Ground terminal for the logic circuit.
3	NC	—	—
4	D. VDD	—	Power supply terminal for the logic circuit .
5	A. GND	—	Ground terminal for the analog circuit.
6	R. OUT	O	Output terminal for the right analog signal.
7, 8	A. VDD	—	Power supply terminal for the analog circuit.
9, 10	R. REF, L. REF	—	Operational Amplifier reference bias terminal. Normally connected to A.GND via a capacitor.
11	L. OUT	O	Output terminal for the left analog signal.
12	A. GND	—	Ground terminal for the analog circuit.
13	LRCK	I	As the pin 1 is "Low" or open, this is input terminal for left/right identification signal. As the pin 1 is "High", this is input terminal for word identification signal of input data.
14	LRSEL	I	As the pin 1 is "Low" or open, this is left/right selection terminal for LRCK signal. At "High" of LRCK signal, set LRSEL pin at "Low" for L-ch DATA input. At "Low" of LRCK signal, set LRSEL pin at "High" for L-ch DATA input. As the pin 1 is "High", this is input terminal for R-ch serial data.
15	DATA	I	As the pin 1 is "Low" or open, this is input terminal for L-ch and R-ch serial data. As the pin 1 is "High", this is input terminal for L-ch serial data.
16	BCK	I	Input terminal for read clock of serial input data.

IC, CXA1645M

Pin No.	Pin Name	I/O	Description
1	GND	—	GND.
2	RIN	I	Analog RGB input terminals.
3	GIN		
4	BIN		
5	NC	—	N. C.
6	SCIN	I	Subcarrier input terminal.
7	NPIN	I	NTSC, PAL mode select terminal. NTSC: Vcc, PAL: GND.
8	BFOUT	O	Output terminal to monitor the BF pulse. Unable to drive 75 Ω load.
9	YCLPC	—	External time constant for Y signal clamp is connected to this terminal.
10	SYNCIN	I	Composite sync signal input terminal. Input at TTL level. SYNC period at L (≦ 0.8 V). H (≧ 2.0 V).
11	NC	—	N. C.
12	VCC	—	Power supply terminal.
13	IREF		Terminal which determines internal reference current.
14	VREF	—	Internal reference voltage terminal.
15	COUT	O	Chroma signal output terminal.
16	YOUT	O	Y signal output terminal.
17	YTRAP	I	Terminal to reduce cross-color due to subcarrier frequency component included in the Y signal.
18	FO	I	fo adjustment terminal of internal filter. The following resistor is connected between GND depending upon NTSC or PAL mode. NTSC: 20 kΩ (±1%) PAL: 16 kΩ (±1%).
19	VCC	—	Power supply terminal.
20	CVOUT	O	Composite video signal output terminal.
21	BOUT	O	Analog RGB signal output terminal
22	GOUT		
23	ROUT		
24	GND	—	GND.

IC, HD6433042F06F

Pin No.	Pin Name	I/O	Description
1	VCC	I	Power supply.
2	CDG DIN	O	CD-G decoder serial data signal.
3	CDG XLT	O	CD-G decoder latch signal.
4	CDG CLK	O	CD-G decoder clock signal.
5~7	GADSP0~2	O	Gate array DSP format 0~2.
8	$\overline{\text{DRQ CDDEC}}$	I	CD-ROM decoder data request signal.
9	$\overline{\text{DRQ MPEG}}$	I	MPEG decoder data request signal.
10	$\overline{\text{RESO}}$	O	External reset output.
11	GND	I	GND.
12	TXD0	O	Serial interface (RXD).
13	TXD1	O	CXD for test.
14	RXD0	I	Serial interface (RXD).
15	RXD1	I	RXD for test.
16	SCK0	I/O	Serial interface (SCK).
17	$\overline{\text{MPRST}}$	O	Peripheral reset. L: RESET ON.
18~21	D0~D3	I/O	Data bus 0~3.
22	GND	I	GND.
23~34	D4~D15	I/O	Data bus 4~15.
35	VCC	I	Power supply.
36~43	A0~A7	O	Address bus 0~7.
44	GND	I	GND.
45~56	A8~A19	O	Address bus 8~19.
57	GND	I	GND.
58	$\overline{\text{WAIT}}$	I	External wait signal.
59	GLUE ON	O	DMA glue circuit enable 0: OFF. 1: ON.
60	M EMPH	O	MPEG AUDIO emphasis 0: OFF. 1: ON.
61	FAI	O	System clock output.
62	$\overline{\text{STBY}}$	I	Standby. (Hardware standby mode at low level).
63	$\overline{\text{RES}}$	I	Reset input. (Reset at low).
64	NMI	I	Non-maskable interrupt. (Non-maskable interrupt is requested).
65	GND	I	GND.
66	EXTAL	I	External crystal is connected to this pin.
67	XTAL	I	External crystal is connected to this pin.
68	VCC	I	Power supply.
69	$\overline{\text{AS}}$	O	Address strobe signal.
70	$\overline{\text{RD}}$	O	External address read enable signal.
71	$\overline{\text{HWR}}$	O	External address high write enable signal.
72	$\overline{\text{LWR}}$	O	External address low write enable signal.
73~75	MOD0~MOD2	I	Mode terminal. Operating mode is set using this terminal.
76	AVCC	I	Power supply terminal of A/D converter and D/A converter.
77	VREF	I	Reference voltage input to A/D converter and D/A converter.

Pin No.	Pin Name	I/O	Description
78, 79	P70, P71	I	IN port 0, 1 for test.
80	PAL/$\overline{\text{NTSC}}$	I	PAL/NTSC status 0: NTSC. 1: PAL.
81	$\overline{\text{REQ CD}}$	I	Serial interface (REQ_CD).
82~85	P74~P77	I	Reserve.
86	AGND	I	GND terminal of A/D converter and D/A converter.
87	$\overline{\text{INT CDDRV}}$	I	Serial interface interrupt.
88	$\overline{\text{INT CDDEC}}$	I	CD-ROM decoder interrupt.
89	$\overline{\text{INT MPEG}}$	I	MPEG decoder interrupt.
90	$\overline{\text{IRQ3}}$	I	Reserve.
91	P84	I	Reserve.
92	GND	I	GND.
93	$\overline{\text{DONE CDDEC}}$	O	CD-ROM decoder DONE signal.
94	$\overline{\text{DONE MPEG}}$	O	MPEG decoder DONE signal.
95	CDG VOFF	O	CD-G decoder video OFF signal. 1: VOFF.
96	SYS MUTE1	O	Audio mute 1 signal. 1: mute ON.
97	INTFLDO	I	EVEN/OFF input signal. 0: EVEN. 1: ODD.
98	SW AUDIO	O	Audio select signal. 0: CD-G/DA. 1: MPEG.
99	$\overline{\text{SYS MUTE0}}$	O	Audio mute 0 signal. 0: mute on.
100	$\overline{\text{REQ MPEG}}$	O	Serial interface (REQ MPEG)

IC, µPD65622GF-239-3B9

Pin No.	Pin Name	I/O	Description
1	LRCKCD	O	Main data signal to CXD1186.
2	SDATACD	O	
3	BCKCD	O	
4	C2POCD	O	
5	$\overline{\text{CSROMH}}$	O	Chip select signal to CXD1186 (host side).
6	$\overline{\text{CSROMC}}$	O	Chip select signal to CXD1186 (CPU side).
7	$\overline{\text{DACKROM}}$	O	DMA acknowledge signal to CXD1186.
8	HDRQ	I	Data transfer request signal from CXD1186. This signal is active high.
9	$\overline{\text{ROMRD}}$	O	Read/write signal to CXD1186.
10	$\overline{\text{ROMWR}}$	O	Read/write signal to CXD1186.
11	EMPHI	I	This signal allows inputting the main data from the CD drive.
12	GND	—	GND.
13	SDATAI	I	This signal allows inputting the main data from the CD drive.
14	BCKI	I	
15	LRCKI	I	
16	C2POI	I	
17	GND	—	GND.
18	16.9M	I	16.9344 MHz oscillator circuit input signal.
19	16.9F	O	16.9344 MHz oscillator circuit output signal.
20	GND	—	GND.
21	GSFSY	I	Write frame clock signal used to input the sub data from CD drive.
22	EMPO	O	Main data signal to CXD1186.
23	LRCKO	O	Audio data signal to audio DAC.
24	SDATAO	O	Audio data signal to audio DAC.
25	RESET	O	Active high reset signal.
26	GND	—	GND.
27	BCKCO	O	Audio data signal to audio DAC.
28	$\overline{\text{GGLUE}}$	I	The input signal which makes the glue circuit valid from GSFSY input.
29	$\overline{\text{GGSFSY}}$	O	Not used.
30	SDATAMA	I	Audio data signal from µPD61010.
31	BCKMA	I	
32	LRCKMA	I	
33	GND	—	GND.
34	VCC	—	Vcc.
35	$\overline{\text{16.9M}}$	O	16.9344 MHz output signal.
36	GND	—	GND.
37	$\overline{\text{DS}}$	O	Control signal to µPD61010.
38	$\overline{\text{CSMPEG}}$	O	Chip select signal to CXD1186.
39	$\text{R}/\overline{\text{W}}$	O	Control signal to µPD61010.
40	INT	I	Interrupt request signal from µPD61010. This signal is active high.
41	$\overline{\text{HDAK}}$	I	Data acknowledge signal from µPD61010.

Pin No.	Pin Name	I/O	Description
42	$\overline{\text{DREQ}}$	I	DRAM data transfer request signal from μPD61010.
43	$\overline{\text{DACKMP}}$	O	DMA acknowledge signal to μPD61010.
44	$\overline{\text{DAK}}$	I	Bit stream data transfer request signal from μPD61010.
45	$\overline{\text{CSCELL}}$	O	Chip select signal to standard cell.
46	GND	—	GND.
47	$\overline{\text{RESET}}$	I	System reset signal.
48	GND	—	GND.
49	$\overline{\text{CSRAM}}$	O	Chip select signal to the system RAM.
50	$\overline{\text{LWR}}$	I	Lower data write signal from CPU.
51	$\overline{\text{HWR}}$	I	Upper data write signal from CPU.
52	$\overline{\text{RD}}$	I	Data read signal from CPU.
53	GND	—	GND.
54	$\overline{\text{AS}}$	I	Address strobe signal from CPU.
55	$\overline{\text{CSIO}}$	O	Optional chip select signal.
56~63	A19~A12	I	Address signal from CPU.
64	GND	—	GND.
65	$\overline{\text{WAIT}}$	O	Wait signal to CPU.
66	GLUEON	I	This signal makes the glue logic valid in order to prevent CPU DMAC from trouble. This circuit is made valid at high.
67	$\overline{\text{SEL12}}$	I	Input signal to select 12 MHz or 16 MHz CPU clock.
68	EMPMA	I	Audio data signal from μPD61010.
69	GND	—	GND.
70	FAI	I	Basic clock signal (12 MHz) from CPU.
71	GND	—	GND.
72	VCC	—	Vcc.
73	GND	—	GND.
74	$\overline{\text{INTMPEG}}$	O	Interrupt request signal to CXD1186.
75	SWAUDIO	I	Selection signal between MPEG audio and CD-DA audio signals.
76	$\overline{\text{DRQI}}$	O	DMA transfer request signal to μPD61010.
77	$\overline{\text{DRQO}}$	O	DMA transfer request signal to CXD1186.
78~80	GADSP2~0	I	Format select signal to convert format of the main data from CD drive.

IC, CXD1186CR

Pin No.	Pin Name	I/O	Description
1~4	A0~A3	I	CPU address signal.
5	HMDS	I	Host mode select signal.
6, 7	HA0, HA1	I	Host address signal.
8	XHCS	I	Chip select negative logic signal from the host.
9	HINT	O	Interrupt request negative logic signal to the host.
10	GND	—	GND.
11	XHRD	I/O	Data read strobe signal from the host or to the SCSI control IC.
12	XHWR	I/O	Data write strobe signal from the host or to the SCSI control IC.
13~20	HDB0~HDB7	I/O	Host data bus.
21	GND	—	GND.
22	HDBP	I/O	Error flag. Host data bus.
23	XRST	I	Reset negative logic signal.
24	HDRQ	O	Data request positive logic signal to the host. Or DMA acknowledge negative logic signal to the SCSI control IC.
25	XHAC	I	DMA acknowledge negative logic signal from the host Or data request positive logic signal from the SCSI control.
26	XTC	I	Terminal count negative logic signal.
27	ADRQ	I	DMA request positive logic signal from ADP.
28	XAAC	O	DMA acknowledge negative logic signal to ADP.
29, 30	BA0, BA1	O	Buffer memory address.
31	VDD	—	Power supply (+5 V) terminal.
32~39	BA2~BA9	O	Buffer memory address.
40	GND	—	GND.
41~46	BA10~BA15	O	Buffer memory address.
47	XMOE	O	Buffer memory output enable negative logic signal.
48	XMWR	O	Buffer memory write negative logic signal.
49	BDB0	I/O	Buffer memory data bus.
50	GND	—	GND.
51~57	BDB1~BDB7	I/O	Buffer memory data bus.
58	BDBP	I/O	Buffer memory pointer data bus.
59	XTL2	O	X'TAL oscillator circuit output terminal.
60	XTL1	I	X'TAL oscillator input terminal.
61	GND	—	GND.
62	HCLK	O	X'TAL 1 divided-by-2 clock signal.
63	LRCK	I	LR clock from CD player.
64	DATA	I	Serial data from CD player.
65	BCLK	I	Bit clock from CD player.
66	C2P0	I	C2 pointer from CD player.
67~70	DB0~DB3	I/O	CPU data bus.
71	VDD	—	Power supply (+5 V) terminal.
72~75	DB4~DB7	I/O	CPU data bus.

Pin No.	Pin Name	I/O	Description
76	XCS	I	Chip select negative logic signal from CPU.
77	XRD	I	IC internal register read-out strobe negative logic signal from CPU.
78	XWR	I	IC internal register write strobe negative logic signal from CPU.
79	INT	O	Interrupt request signal to CPU.
80	GND	—	GND.

IC, TLC29321PW

Pin No.	Pin Name	I/O	Description
1	VDD	—	Power supply terminal to the internal logic circuit.
2	VCO LS	I	VCO output frequency divide-by-2 divider select terminal. The VCO output frequency can be divided by 2 and output as this terminal is controlled by external logic.
3	VCOO	O	VCO output terminal. Goes to low level during inhibit.
4, 5	FIN-A, FIN-B	I	2 input terminal for edge difference detection between the reference frequency (fREF-IN) and the frequency from external counter. The fREF-IN is input to the FIN-A terminal normally, and the divided or multiplied frequency from external counter is input to the FIN-B terminal.
6	PFDO	O	PFD output terminal.
7	GND	—	Internal logic circuit GND terminal.
8	NC	—	N.C.
9	PFDIH	I	PFD inhibit function control terminal.
10	VCOIH	I	VCO inhibit function control terminal.
11	A GND	—	VCO GND.
12	VCOI	I	VCO control voltage input. The VCO oscillator control voltage is input from an external low-pass filter to form PLL.
13	RBIAS	I	External resistor is connected to this terminal for setting the VCO oscillation frequency. A bias resistor is connected between this terminal and power supply line to supply bias for internal VCO oscillation and for setting and adjusting the oscillating frequency.
14	A VDD	—	VCO power supply voltage terminal.

IC, HD49307

Pin No.	Pin No.	I/O	Description
1~5	G4~G8	I	Digital input terminal.
6	B1	—	N. C.
7	NC	I	Digital input terminal.
8~12	B2~B6	I	Digital input terminal.
13~15	NC	—	N. C.
16, 17	B7, B8	I	Digital input terminal.
18	NC	—	N. C.
19	RCLK	I	R channel clock input.
20	GCLK	I	G channel clock input.
21	BCLK	I	B channel clock input.
22	DVSS	—	Digital GND.
23	DVDD	—	Digital power supply.
24	NC	—	N. C.
25	CBU	—	External phase compensation capacitance connection terminal.
26	CBL	—	Bypass capacitance connection terminal.
27~29	NC	—	N. C.
30	VRREF	I	Reference voltage input terminal.
31	AVSS	—	Analog GND.
32	AVDD	—	Analog power supply.
33	BOUT	O	B channel analog signal output terminal.
34	AVDD	—	Analog power supply.
35	NC	—	N. C.
36	GOUT	O	G channel analog signal output terminal.
37	AVDD	—	Analog power supply.
38	ROUT	O	R channel analog signal output terminal.
39	AVSS	—	Analog GND.
40	AVDD	—	Analog power supply.
41	DVDD	—	Digital power supply.
42	R1	I	Digital input terminal.
43~44	NC	—	N. C.
45~51	R2~R8	I	Digital input terminal.
52~54	G1~G3	I	Digital input terminal.
55, 56	NC	—	N. C.

IC, µPD61010

Pin No.	Pin Name	I/O	Description
1	VDD	—	+5 V power supply.
2~6	HD9~5	I/O	Host data bus.
7	VDD	—	+5 V power supply.
8	GND	—	GND.
9~13	HD4~0	I/O	Host data bus.
14	VDD	—	+5 V power supply.
15	GND	—	GND.
16	$\overline{\text{DREQ}}$	O	DMA request signal.
17	$\overline{\text{DACK}}$	I	DMA acknowledge signal.
18	HSEL	I	Signal to select the host CPU access method.
19	DRQ	I	Data input request for bit stream input from CD-ROM decoder.
20	VDD	—	+5 V power supply.
21	GND	—	GND.
22	$\overline{\text{DAK}}$	O	Data input response for bit stream input from CD-ROM decoder, or DMA input request for code input.
23	$\overline{\text{DRD}}$	O	Bit stream input approval signal.
24, 25	NC	—	N. C.
26~33	CD0~7	I	Data bus for bit stream input from CD-ROM decoder.
34	VDD	—	+5 V power supply.
35	GND	—	GND.
36~39	MD7~4	I/O	DRAM data bus.
40	VDD	—	+5 V power supply.
41, 42	GND	—	GND.
43~46	MD3~0	I/O	DRAM data bus.
47, 48	MD15, 14	I/O	DRAM data bus.
49	VDD	—	+5 V power supply.
50	GND	—	GND.
51~56	MD13~8	I/O	DRAM data bus.
57	VDD	—	+5 V power supply.
58	GND	—	GND.
59~64	MA0~5	O	DRAM address bus.
65	VDD	—	+5 V power supply.
66	GND	—	GND.
67~69	MA6~8	O	DRAM address bus.
70	$\overline{\text{RAS 1}}$	O	DRAM RAS signal.
71	$\overline{\text{RAS 0}}$	O	DRAM RAS signal.
72	$\overline{\text{CAS}}$	O	DRAM CAS signal.
73	VDD	—	+5 V power supply.
74	$\overline{\text{WE}}$	O	Write enable to DRAM.
75~77	NC	—	N. C.
78	VOE	I	Video data output enable.

Pin No.	Pin Name	I/O	Description
79, 80	GND	—	GND.
81	VDD	—	+5 V power supply.
82	NC	—	N. C.
83	FLDI	I	Field signal (odd/even)
84	HDI	I	Horizontal sync signal.
85	VDI	I	Vertical sync signal.
86	VDCLK	I	Video data output clock (13.5 MHz).
87	VDD	—	+5 V power supply.
88~91	VDATA23~20	O	Video data output bus.
92	GND	—	GND.
93	VDD	—	+5 V power supply.
94~97	VDATA19~16	O	Video data output bus.
98, 99	VDATA15, 14	O	Video data output bus.
100	VDD	—	+5 V power supply.
101	GND	—	GND.
102~105	VDATA13~10	O	Video data output bus.
106	VDD	—	+5 V power supply.
107	GND	—	GND.
108~112	VDATA9~5	O	Video data output bus.
113	VDD	—	+5 V power supply.
114	GND	—	GND.
115~119	VDATA4~0	O	Video data output bus.
120	VDD	—	+5 V power supply.
121, 122	GND	—	GND.
123	DO	O	Video data output bus.
124	BCK	O	Video data output clock.
125	LRCK	O	L/R channel identification signal.
126	MCLK	O	Audio master clock.
127	NC	—	N. C.
128	AUCLK	I	Internal audio decoder system clock.
129	VDD	—	+5 V power supply.
130~132	NC	—	N. C.
133	VDD	—	+5 V power supply.
134	$\overline{\text{RESET}}$	I	Reset signal.
135	CLK	I	System clock (27 MHz)
136	GND	—	GND.
137	$\overline{\text{DS}}$	I	Data strobe signal.
138	R/$\overline{\text{W}}$	I	Read/write select.
139	$\overline{\text{CS}}$	I	Chip select.
140~145	HADR0~5	I	Host address bus.
146, 147	GND	—	GND.

Pin No.	Pin Name	I/O	Description
148	INT	O	Interrupt signal.
149	$\overline{\text{HDAK}}$	O	Bus cycle response signal.
150	VDD	—	+5 V power supply.
151	GND	—	GND.
152~157	HD15~10	I/O	Host data bus.
158	VDD	—	+5 V power supply.
159, 160	GND	—	GND.

IC, μPD63210GT

Pin No.	Pin Name	I/O	Description
1	TSEL	I	Test selection input.
2	RST	I	Reset input.
3	XTO	O	External crystal oscillator is connected to this pin.
4	XTI	I	External crystal oscillator is connected to this pin.
5	MCKO	O	Master clock output.
6	CKSEL	I	Clock selection input.
7	CLK	I	Bit clock input.
8	SI	I	Data input.
9	LRCK	I	LR clock input.
10	DEFS1	I	Deemphasis selection input 1.
11	DEFS2	I	Deemphasis selection input 2.
12	DSEL	I	Double speed playback selection input..
13	SMUTE	I	Soft mute selection input.
14	BSEL	I	Data bit length selection input.
15	DGND	—	Digital GND.
16	AGND	—	Analog GND.
17	RO	O	D/A converter output (R channel).
18	AOR	O	Filter amplifier output (R channel).
19	ANIR	I	Filter amplifier (-) input (R channel).
20	APIR	I	Filter amplifier (+) input (R channel).
21	RREF	—	Reference (R channel).
22	LREF	—	Reference (L channel).
23	APIL	I	Filter amplifier (+) input (L channel).
24	ANIL	I	Filter amplifier (-) input (L channel).
25	AOL	O	Filter amplifier output (L channel).
26	LO	O	D/A converter output (L channel).
27	AVDD	—	Analog power supply.
28	DVDD	—	Digital power supply.

IC, TC170C100AF

Pin No.	Pin Name	I/O	Description
1~5	YIN4~0	I	Y signal from MPEG chip.
6	GND	—	GND.
7~14	UIN7~0	I	U signal from MPEG chip.
15	GND	—	GND.
16, 17	VIN7, 6	I	V signal from MPEG chip.
18	VCC	—	Power supply terminal.
19~24	VIN5~0	I	V signal from MPEG chip.
25	GND	—	GND.
26	FLDO	O	Odd/even signal output of a field.
27	$\overline{\text{HDO}}$	O	$\overline{\text{HSYNC}}$ signal to MPEG chip.
28	$\overline{\text{VDO}}$	O	$\overline{\text{VSYNC}}$ signal to MPEG chip.
29	PCP	O	Clamp signal output.
30	CBLK	O	Blanking signal output (used depending upon type of DAC).
31	GND	—	GND.
32	FSC	O	Sub carrier output (Divided-by-four of NTSC: 14.31818 MHz. PAL: 17.734475 MHz).
33	CDG/$\overline{\text{MPEG}}$	O	CD-G or MPEG play selector signal to external RGB video selector.
34	TEST0	I	Operation mode setting terminal.
35	GND	—	GND.
36	13.5M	O	13.5 MHz output.
37	GND	—	GND.
38~43	R OUT7~2	O	Y/R signal output (Output format can be selectable in Y/R).
44	GND	—	GND.
45, 46	R OUT1, 0	O	Y/R signal output (Output format can be selectable in Y/R).
47~54	G OUT7~0	O	U/G signal output (Output format can be selectable in U/G).
55	VCC	—	Power supply terminal.
56~63	B OUT7~0	O	V/B signal output (Output format can be selectable in V/B).
64	GND	—	GND.
65	27M	I	27 MHz input.
66	TEST1	I	Operation mode setting terminal.
67	SHSYNC	O	Comparison clock for PLL synchronizing CLK.
68	MHSYNC	O	Reference clock for PLL synchronizing CLK.
69	VCC	—	Power supply terminal.
70	OSC1	I	14.31818 MHz input port (crystal oscillation) when supporting NTSC.
71	OSC2	O	NTSC: 14.31818 MHz crystal oscillation output terminal.
72, 73	GND	—	GND.
74	OSC3	I	17.734475 MHz input port (crystal oscillation) when supporting PAL.
75	OSC4	O	17.734475 MHz crystal oscillation output terminal.
76	VCC	—	Power supply terminal.
77, 78	TEST2, 3	I	Operation mode setting terminal.
79	FMOD	I	FLD0 output HL inversion selection signal.
80	PMOD	I	PCP output HL inversion selection signal.

Pin No.	Pin Name	I/O	Description
81	GND	—	GND.
82~85	T15~T12	I	RAM data input terminals 15 - 12 during RAM check.
86	T11OP3	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
87	T10OP2	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
88	T9OP1	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
89	T8OP0	I/O	OUT port terminals 3 - 0 (address 4). RAM data input terminals 11 - 8 during RAM check.
90	VCC	—	Power supply terminal.
91	$\overline{\text{GHSYNC}}$	I	$\overline{\text{HSYNC}}$ signal from CD-G decoder.
92	$\overline{\text{GVSYNC}}$	I	$\overline{\text{VSYNC}}$ signal from CD-G decoder.
93	$\overline{\text{GCSYNC}}$	I	$\overline{\text{CSYNC}}$ signal from CD-G decoder.
94	GND	—	GND.
95~98	T7~4	I	RAM data input terminals 7 - 4 during RAM check.
99	T3IP3	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
100	T2IP2	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
101	T1IP1	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
102	T0IP0	I	IN port terminals 3 - 0 (address 5). RAM data input terminals 3 - 0 during RAM check.
103	GND	—	GND.
104	4FSC	O	104 NTSC: 14.31818 MHz. PAL: 17.734475 MHz buffer output.
105	GND	—	GND.
106	RAMCE	I	Chip enable signal for checking internal RAM and ROM check. (Fixed to low normally).
107	RAMW	I	Read/write signal for checking internal RAM and ROM check. (Fixed to low normally).
108	XT2C	I	XT2C input (used for HYNC DL delay).
109	GND	—	GND.
110	$\overline{\text{RST}}$	I	Input port of the reset signal.
111	GND	—	GND.
112	PAL/$\overline{\text{NTSC}}$	I	PAL/NTSC selector port.
113	HSYNCIN	O	Inverted output of $\overline{\text{HYNSC}}$ IN.
114	$\overline{\text{HSYNCIN}}$	I	$\overline{\text{SYNC}}$ signal from VST (only when supporting FMV engine).
115	$\overline{\text{VSYNCIN}}$	I	$\overline{\text{VSYNC}}$ from VSC. (only when supporting FMV engine).
116	GND	—	GND.
117~124	D7~0	I/O	CPU data bus signal.

Pin No.	Pin Name	I/O	Description
125	VCC	—	Power supply terminal.
126	CMOD	I	CLBK output HL inversion selection signal.
127	$\overline{\text{VOD}}$	I	Video output disable.
128	VCD/$\overline{\text{FMV}}$	I	VIDEO CD/DMV engine selection port.
129	$\overline{\text{CS}}$	I	Chip select signal.
130	$\overline{\text{RD/LDS}}$	I	READ signal from CPU $\overline{\text{RD}}$ (when supporting H8). $\overline{\text{LD}}$ (when supporting 680009).
131	$\overline{\text{WR}}$/R/$\overline{\text{W}}$	I	$\overline{\text{WRITE}}$ signal from CPU $\overline{\text{WR}}$ (when supporting H8). R/W (when supporting 680009).
132~134	A2~0	I	Address signal from CPU.
135	H8/$\overline{\text{68}}$	I	CPU H8-325/68000 selection port.
136	GND	—	GND.
137	$\overline{\text{HSYNCO}}$	O	Horizontal sync output.
138	$\overline{\text{VSYNCO}}$	O	Vertical sync output.
139	$\overline{\text{CSYNCO}}$	O	Composite sync output. $\overline{\text{CSYNC}}$ signal from video encoder.
140	SMOD	I	13.5 MHz ↑ ↓ selection of SYNC signal output. Selection is possible at the final stage of $\overline{\text{HDO}}$, $\overline{\text{VDO}}$, $\overline{\text{HSYNCO}}$, $\overline{\text{VSYNCO}}$, $\overline{\text{CSYNCO}}$, SHYNC, PCP, CBLK, FLDO. (However, $\overline{\text{HSYNCO}}$, $\overline{\text{VSYNCO}}$, $\overline{\text{CSYNCO}}$ are supported during SYNC output of the CD-G decoder.)
141	VCC	—	Power supply terminal.
142~144	YIN7~5	I	Y signal from MPEG chip.

IC, MB89627

Pin No.	Pin Name	I/O	Description
1	CCLK	O	SSP, DSP Control Clock.
2	DATA	O	SSP, DSP Control Data.
3	SENS	I	SSP, DSP Status.
4	XLAT	O	SSP, DSP Command Latch.
5	XRST	O	SSP, DSP Reset.
6	TVMSW	O	OFF/NTSC/PAL/PAL60/PAL AUTO/AUTO/TEST. *NOTE
7	DMUTE	O	Digital Mute.
8	AMUTE	O	Analog Mute.
9	LDON	O	Servo PCB Power on.
10	VCDRST	O	Video CD Reset.
11	OPTON	O	Optical Digital Output ON.
12	VCC	—	A/D Converter VCC.
13	VCC	—	A/D Converter VREF.
14	VSS	—	A/D Converter VSS.
15	HOSTIRQ	I	Host CPU Interrupt Request.
16	SCOR	I	Subcode Sync 0. (Subcode IRQ)
17	ILSW	I	Inter Limit Switch.
18	VCDIRQ	I	Video CD Decoder Interrupt Request.
19	N. C.	I	Not used.
20	RST	I	CPU Reset.
21	MODE0	I	CPU MODE. (Pull-down)
22	MODE1	I	CPU MODE. (Pull-down)
23	CLKIN	O	8MHz System Clock.
24	CLKOUT	I	8MHz System Clock.
25	VSS	—	GND.
26	ALE	O	Address Latch Strobe.
27	RD	O	Data Read Strobe.
28	WR	O	Data Write Strobe.
29	CLK	O	Clock out.
30	READY	I	Video CD Decoder Ready.
31	OSDCS	O	OSDC Enable.
32	OSDCLK	O	OSDC Data Clock.
33	OSDSIN	O	OSDC Data.
34~41	A8~A15	O	Address Bus 8~15.
42~49	AD0~AD7	I/O	Address/Data Bus 0~7.
50	VSS	—	GND.
51	VCD/CDG	O	Video CD/CDG Switch.
52	HCLK	I	Host CPU Control Clock.
53	ST	O	Host CPU Control Send Data.
54	RT	I	Host CPU Control Receive Data.
55	TRACK	I	Travase Counter.

Pin No.	Pin Name	I/O	Description
56	ENCRST	O	Video Encoder Reset.
57	DVCC	—	DVCC.
58	PAL/PAL60	O	PAL/PAL60 Switch.
59	XNTSC	O	PAL/NTSC Switch.
60	SQCK	O	Subcode Q Read Clock.
61	SQSO	I	Subcode Q Serial Data.
62	BUSY	I/O	Host CPU I/F Busy Signal.
63	FOK	I	Focus Servo OK Detect.
64	GFS	I	Frame Sync Detect.

Note

- Analog input (TVMSW: 6 pin) of the microprocessor is divided into 7, then controlled.
- The output are the command setting (Set Video Format) to the two ports of PAL/PAL60 (58 pin), XNTSC (59 pin) and IC301 (CL484).

TVMSW (6 pins)		DISC encoding system	TV output mode	PAL/PAL60 (58 pins)	XNTSC (59 pins)	Set Video Format
Volt (V)	Mode					
5.00	OFF	—	Not used (NTSC output mode).			
4.58	NTSC	—	NTSC	H	L	NTSC
3.75	PAL	—	PAL	H	H	PAL
2.92	PAL60	—	PAL60	L	H	NTSC
2.08	PAL AUTO	NTSC	PAL60	L	H	NTSC
		PAL	PAL	H	H	PAL
1.25	AUTO	NTSC	NTSC	H	L	NTSC
		PAL	PAL	H	H	PAL
0.42	TEST	—	For servo circuit adjustment (NTSC output mode).			
0.00						

*1 As to identification of the disc encoding system, it is identified from the V_SIZE (1A1h/word) of the MPEG data.

*2 "For servo circuit adjustment" is the process during adjustment (when variable resistor is operated by service engineer) that the microprocessor enters the emergency process routine if the servo system goes extremely out of the servo range.

*3 In addition to the above, ENCRST (56 pin) is the reset signal for TV encoder, issues the active "L" pulse when each of the input port of CDGSW, NTB, CVSY, HSY, PIXCLK, GCLK, PAL60B and VCLK of IC401 (BU1417AK) has changed as follows:

① When the power is supplied to the circuit boards of the CD block,

② When starting to reach TOC.

③ The modes have changed as follows:

- TVMSW is switched.
- Switching of encoding system owing to exchange of video CD disc
- Exchange of video CD disc with the CD-DA or CD-G.

IC, CL484

Pin No.	Pin Name	I/O	Description
1	HSEL2	I	Host address bus.
2	-DS	I	Data strobe.
3	R/-W	I	Read/write.
4	CFLEVEL	O	Coded data FIFO level status. Open drain.
5	-DACK	O	Host data acknowledge. Open drain.
6	HD0	I/O	Host data bus.
7	VDD3	—	Power supply pin. Used in 3.3 V.
8, 9	HD1, HD2	I/O	Host data bus.
10	VSS	—	GND.
11~15	HD3~HD7	I/O	Host data bus.
16	VSS	—	GND.
17	-TEST	I	Test terminal. Normally fixed to High.
18	VSS	—	GND.
19	XTL IN	I	Global clock. 40.5 MHz.
20	XTL OUT	O	Global clock. 40.5 MHz.
21, 22	VDD3	—	Power supply pin. Used in 3.3 V.
23~28	MD0~MD5	I/O	Memory data bus.
29	VDD3	—	Power supply pin. Used in 3.3 V.
30, 31	MD6, MD7	I/O	Memory data bus.
32, 33	-MCE0, -MCE1	O	Chip enable.
34~37	MD8~MD11	I/O	Memory data bus.
38	VSS	—	GND.
39~42	MD12~MD15	I/O	Memory data bus.
43	VDDMAX	—	Power supply pin. Used in 5.0 V.
44	-LCAS	O	Lower digit, column address strobe.
45	-LCASIN	I	Lower digit, data latch enable.
46	VSS	—	GND.
47	-MWE	O	Write enable.
48	-UCAS	O	Higher digit, column address strobe.
49	VDD3	—	Power supply pin. Used in 3.3 V.
50	-UCASIN	I	Higher digit, data'latch enable.
51, 52	RAS0, RAS1	O	Lower address strobe.
53~57	MA9~MA5	O	Memory address bus.
58	VSS	—	GND.
59~63	MA4~MA0	O	Memory address bus.
64	RESERVED	—	Reserved.
65	VDD3	—	Power supply pin. Used in 3.3 V.
66~72	VD0~VD6	O	Pixel data bus. RGB or YCbCr format.
73	VSS	—	GND.
74~76	VD7~VD9	O	Pixel data bus. RGB or YCbCr format.
77	VDD3	—	Power supply pin. Used in 3.3 V.

Pin No.	Pin Name	I/O	Description
78~80	VD10~VD12	O	Pixel data bus. RGB or YCbCr format.
81	VDD3	—	Power supply pin. Used in 3.3 V.
82~84	VD13~VD15	O	Pixel data bus. RGB or YCbCr format.
85	VSS	—	GND.
86~89	VD16~VD19	O	Pixel data bus. RGB or YCbCr format.
90	VSS	—	GND.
91~94	VD20~VD23	O	Pixel data bus. RGB or YCbCr format.
95	-VSYNC or CSY	I/O	Vertical sync signal.
96	-HSYNC	I/O	Horizontal sync signal.
97	-VOE	I	Video output enable.
98	VDD3	—	Power supply pin. Used in 3.3 V.
99	VCLK	I/O	Video clock.
100	VSS	—	GND.
101	-RESET	I	Hardware reset.
102	VSS	—	GND.
103	CD-C2PO	I	Data error. Used during CD-ROM data input.
104	CD-LRCK	I	LR clock.
105	CD-DATA	I	Serial data input from CD-DSP.
106	CD-BCK	I	Bit clock from CD decoder.
107	DA-LRCK	O	LR clock.
108	DA-DATA	O	Bit serial audio sample signal.
109	DA-BCK	O	Audio bit clock.
110	VDD3	—	Power supply pin. Used in 3.3 V.
111	DA-XCLK	I	External audio frequency clock.
112	VDD3	—	Power supply pin. Used in 3.3 V.
113	-INT	O	Interrupt request.
114	CDG-S0S1	I	Block start sync.
115	HOST_ENA	I	Host enable.
116	RAM_ENA	I	Boot ROM enable.
117	CDG-VFSY	I	Frame start or composite sync.
118	DAC_EMP	O	Output emphasis flag.
119	CDDA_EMP	I	Input emphasis flag.
120	CDG-SDATA	I	Subcode data.
121	CDG-SCLK	I/O	Subcode data clock.
122	CDDA/VCD	O	Input data identification. H: CDDA. L: video CD.
123	VDDMAX	I	Power supply pin. Used in 5.0 V.
124	FSC1	O	Output generated by dividing-by-4 the pin-126 input CLK.
125	VSS	—	GND.
126	FSC4	I	Frequency divider input.
127, 128	HSEL0, HSEL1	I	Host address bus.

IC, BU1417AK

Pin No.	Pin Name	I/O	Description
1	BOSD	I	OSD Blue Data input.
2	GD0	I	Green Data Bit 0. (LSB)
3~8	GD1~GD6	I	Green Data Bit 1~6.
9	GND	—	Digital ground.
10	GD7	I	Green Data Bit 7. (MSB)
11	BD0	I	Blue Data Bit 0. (LSB)
12~14	BD1~BD3	I	Blue Data Bit 1~3.
15	OSDSW	I	OSD input enable.
16	CDGSWB	I	Select Video-CD/$\overline{\text{CD-G}}$.
17~19	BD4~BD6	I	Blue Data Bit 4~6.
20	BD7	I	Blue Data Bit 7. (MSB)
21	GND	—	Digital ground.
22	NTB	I	Select $\overline{\text{NTSC}}$/PAL mode.
23, 24	IM0, IM1	I	Input mode set Bit 0, 1.
25, 26	TEST1, TEST2	I	Normally pulldown to GND.
27	CVSY	I	C-SYNC or V-SYNC input.
28	HSY	I	H-SYNC input.
29	PIXCLK	O	1/2 Freq. of internal CL.
30	BLKB	I	Data blanking $\overline{\text{ENABLE}}$.
31	VDD	—	Digital VDD.
32	INT	I	INTERLACE/$\overline{\text{NON-INTERLACE}}$.
33	SLABEB	I	Set mode MASTER/$\overline{\text{SLABE}}$.
34	ADDH	I	ADD One_line at Non-inter.
35	VREF	I	Reference voltage. (1.29V)
36	CGND	—	Chroma output ground.
37	COUT	O	Chroma output.
38	VGND	—	Composite output ground.
39	VOUT	O	Composite output.
40	AVSS	—	Analog (DAC, VREF) ground.
41	NC	—	Not used.
42	IR	I	Reference resistor. (1.2K)
43	AVDD	—	Analog (DAC, REF) VDD.
44	YGND	—	Luminance output ground.
45	YOUT	O	Luminance output.
46	G4FSC	I	Pulldown to GND.
47	GCLK	I	Video clock input for CD-G.
48	YCOFF	I	DAC (YOUT, COUT) off.
49	YFILON	I	Pulldown to GND.
50	PAL60B	I	$\overline{\text{PAL60 ON}}$ at NTB=HIGH.
51	VCLK	I	Video clock input for VCD.
52	RSTB	I	Logic part initial reset.

Pin No.	Pin Name	I/O	Description
53	CLKSW	I	Divide input CLK $\overline{\text{ENABLE}}$.
54	RD0	I	Red data Bit 0. (LSB)
55, 56	RD1, RD2	I	Red data Bit 1, 2.
57	ROSD	I	OSD Red data input.
58~60	RD3~RD5	I	Red data Bit 3~5.
61	VDD	—	Digital VDD.
62	RD6, RD7	I	Red data Bit 6, 7.
63	GOSD	I	OSD green data input.

IC, BU2173AF

Pin No.	Pin Name	I/O	Description
1	VDD	—	Digital VDD.
2	TSTO	O	Open during normal mode. (Used in test mode.)
3	XTALI	I	Reference oscillator input.
4	XTALO	O	Reference oscillator output.
5	CTRLA	I	CD-G/VCD clock selector terminal.
6	CTRLB	I	Fixed to "H" during normal mode.
7	CTRLC	I	CD-G PAL/NTSC clock selector terminal.
8	TSTI	I	Connected to Vss during normal mode. (Used in test mode.)
9	VSS	—	Digital GND.
10	AVSS	—	Analog GND.
11	FOUT3	O	Not used. Open during normal mode.
12	VSSIO	—	I/O GND.
13	FOUT2	O	Clock output (2).
14	TEST	—	Test mode setting. Connected to Vss during normal mode.
15	FOUT1	O	Clock output (1).
16	VDDIO	—	I/O VDD.
17	FOUT4	O	Clock output (4).
18	AVDD	—	Analog VDD.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

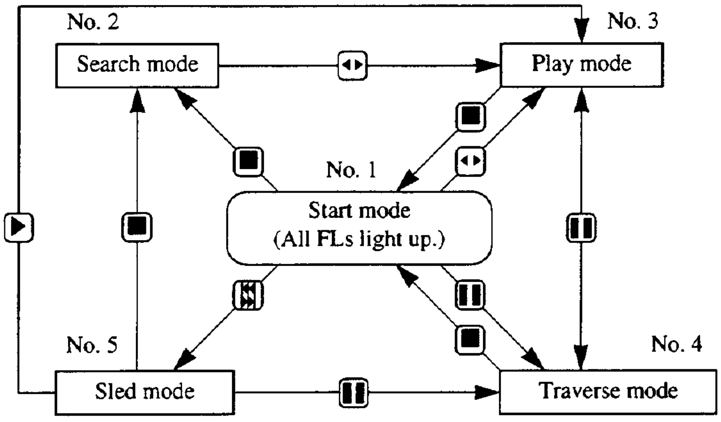
2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • Laser diode turns always ON. (CD block power is ON.)	• FL display check (All displays light.) • APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.)
Search mode No.2	■ key	CD--	• Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD 1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key	CD 1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

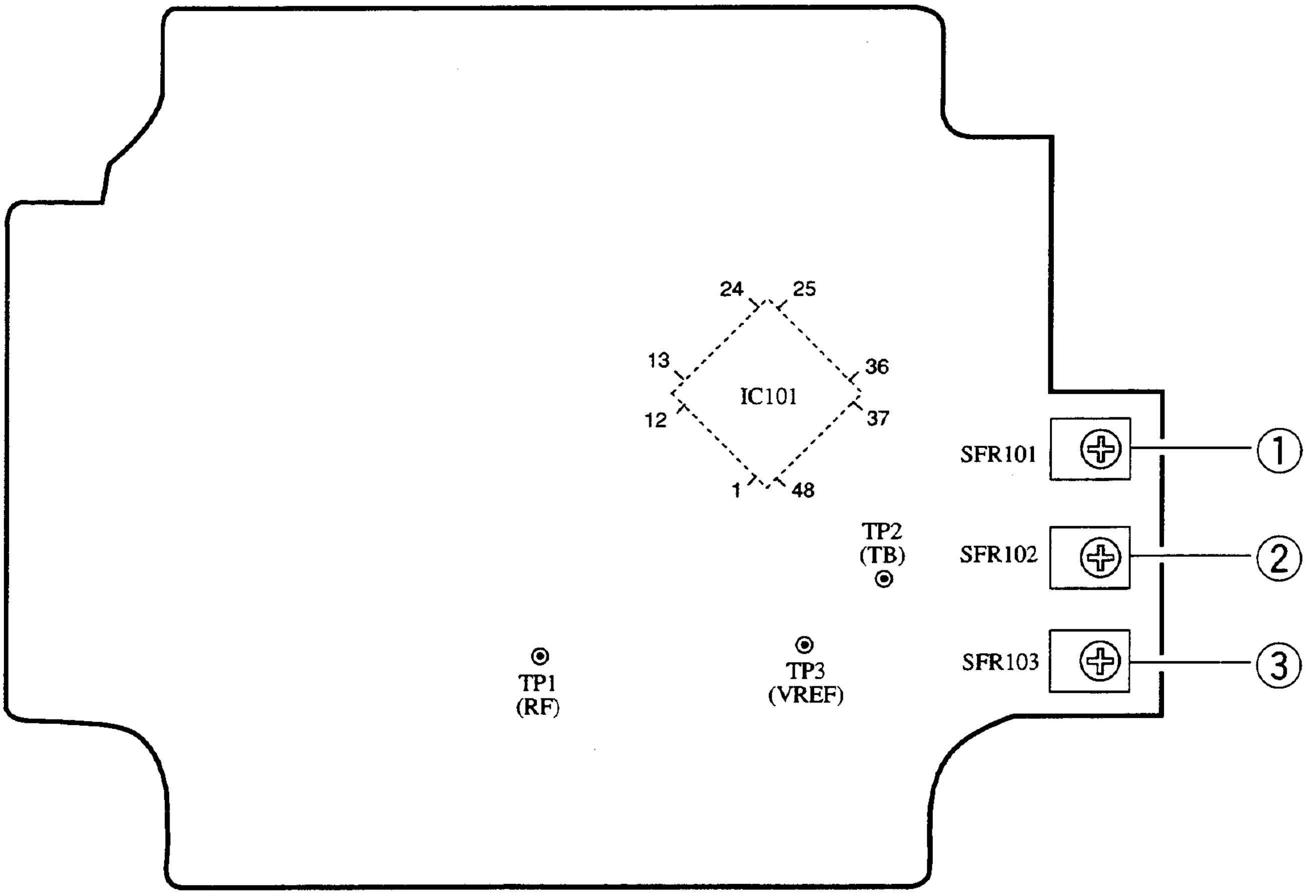
* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.
* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

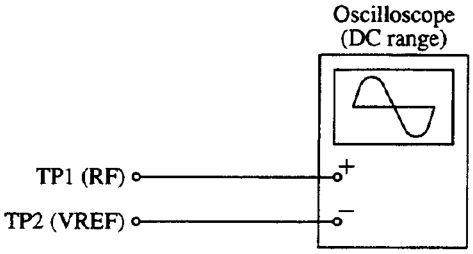
B CD MECHA C.B


24
25
13
36
IC101
12
37
1
48
SFR101
①
TP2
(TB)
SFR102
②
SFR103
③
TP1
(RF)
TP3
(VREF)

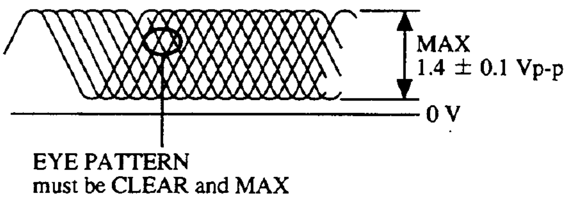
Note: Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

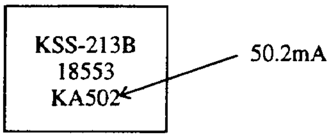


1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR101 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



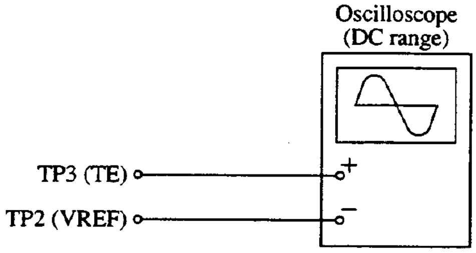
VOLT/DIV : 50mV
TIME/DIV : 0.5µS

Note: The current of the laser signal can be checked with the voltages on both sides of R127 (10Ω). The difference for the specified value shown on the lavel must be within ± 6.0mA.

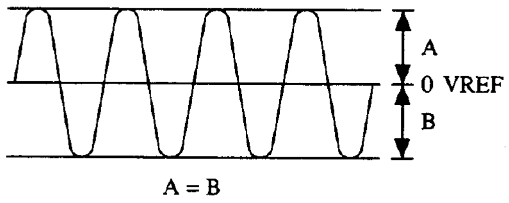


$$\text{Laser current Iop} = \frac{\text{Voltage across R127}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR103 to decrease the tracking gain.
5) Adjust SFR102 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the terminals.



VOLT/DIV : 20mV
TIME/DIV : 1mS

3. Tracking Gain Adjustment

A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.

When the gain adjustment is off, the symptoms below appear.

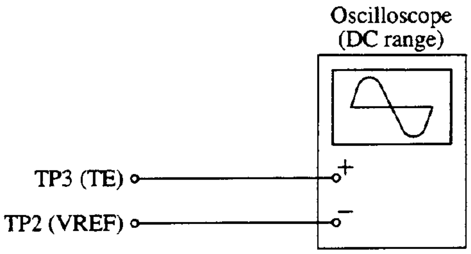
Gain Symptoms	(Focus)	Tracking
● The time until music starts becomes longer for STOP→ ▶ PLAY or automatic selection (⏮, ⏭ buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP → ▶ PLAY or automatic selection (⏮, ⏭ buttons pressed.)	—	low
● Disc stops to rotate shortly after STOP→ ▶ PLAY.	low or high	—
● Sound is interrupted during PLAY. Or time counter display stops.	—	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

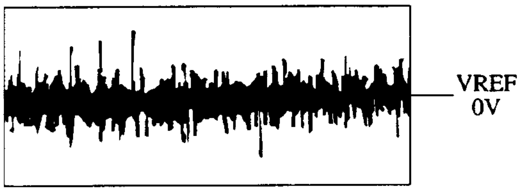
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF) of the CD MECHA C.B.
4) Adjust SFR103 so that the waveform appears as shown in the figure below. (tracking gain adjustment)

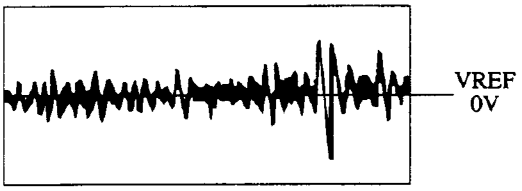


VOLT/DIV: 50 mV
TIME/DIV: 1mS

- Incorrect example

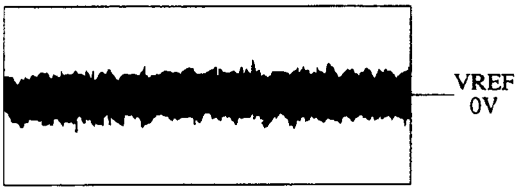
Low tracking gain

The fundamental wave appears as compared with the waveform adjusted.



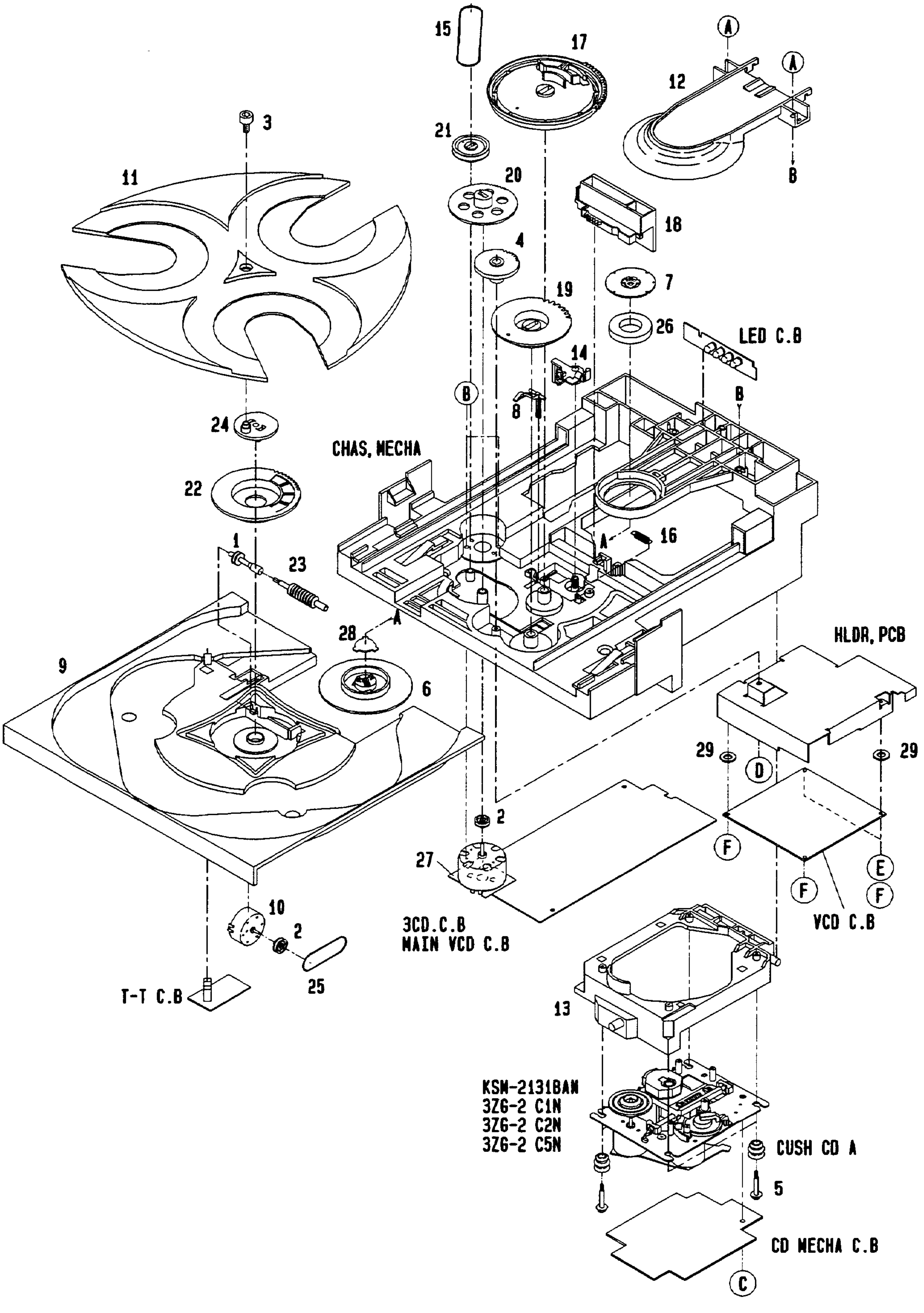
VOLT/DIV: 50 mV
TIME/DIV: 1mS

High tracking gain
The frequency of the fundamental wave is higher than that in low gain.



VOLT/DIV: 50 mV
TIME/DIV: 1mS

MECHANICAL EXPLODED VIEW 1 ／ 1

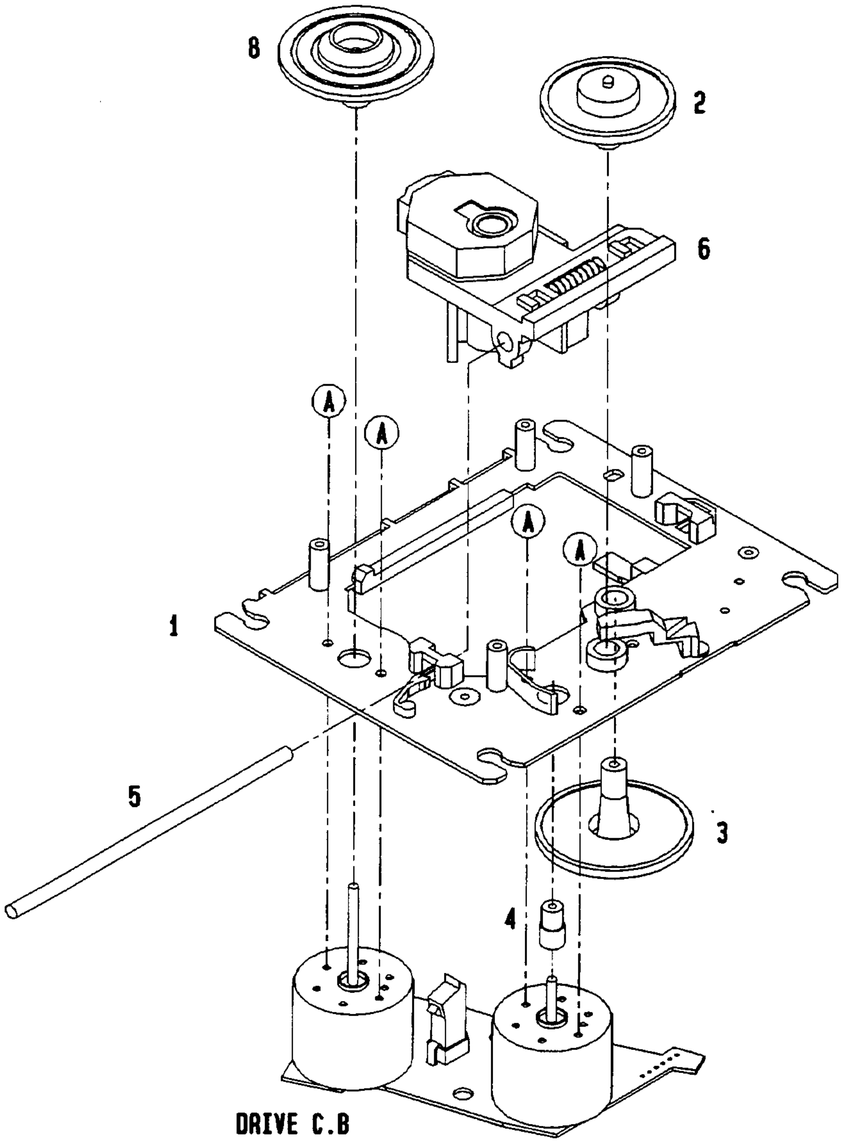

15
17
A
A
12
B
3
21
11
20
18
4
7
19
26
LED C.B
14
B
8
B
24
CHAS, MECHA
22
A
16
1
23
28
A
HLDR, PCB
9
6
29
D
29
2
27
F
E
F
F
3CD.C.B
MAIN VCD C.B
VCD C.B
10
2
25
T-T C.B
13
KSM-2131BAM
3Z6-2 C1N
3Z6-2 C2N
3Z6-2 C5N
CUSH CD A
5
CD MECHA C.B
C

MECHANICAL PARTS LIST 1／1

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	84-ZG1-239-11K		PULLY,WORM N
2	81-ZG1-212-01K		PULLY,LOAD MO
3	81-ZG1-239-019		S-SCREW,TT
4	81-ZG1-291-019		GEAR,TRAY RELAY NO3
5	81-ZG1-271-019		S-SCREW,MECH REAR
6	81-ZG1-277-219		HLDR,MAGNET N
7	81-ZG1-255-119		PLATE,MAGNET MK2
8	83-ZG3-213-019		LVR,SW
9	84-ZG1-003-219		TRAY,NO2-B
10	87-045-364-019		MOTOR,(BCH3B14)
11	84-ZG1-005-119		TURNTABLE,NO1
12	84-ZG1-010-019		IND,CD N<V3L,V4L>
12	84-ZG1-011-019		REFLECTOR,CD<A,B,Z,V5>
13	84-ZG1-212-119		HLDR,MECHA NO2
14	84-ZG1-208-019		LEVER,CAM
15	84-ZG1-209-010		BELT,SQ1.8-117.7
16	84-ZG1-211-019		SPR-E CAM S
17	84-ZG1-215-219		GEAR,MAIN CAM BLU
18	84-ZG1-216-219		SLIDE,MECHA CAM YEL
19	84-ZG1-205-119		GEAR,TRAY
20	84-ZG1-206-119		GEAR,RELAY
21	84-ZG1-219-019		PULLY,RELAY BGE
22	84-ZG1-221-019		GEAR,MAIN TT
23	84-ZG1-238-01K		GEAR,WORM N
24	84-ZG1-224-019		LEVER,TT
25	84-ZG1-225-010		BELT,SQ1.0-63.3
26	87-036-326-010		MAGNET,CLAMPER 93<A,B,Z,WR,V5>
26	83-ZG3-602-010		RING,MAG<V3L,V4L>
27	80-CD3-214-019		CUSH CD A
28	84-ZG1-248-019		SPR-C,WORM
29	82-DW1-220-019		SPACER,DIA 3.6-8-0.24<V3L>
A	87-067-703-019		BVT2+3-10 (W/O SLOT)<EXCEPT WR>
B	87-251-070-419		U+2.6-3<Z>
C	87-342-036-219		UT2+2-8<V3L,V4L,V5>
D	87-067-579-019		BVT 2+3-8 W/O SLOT<V3L,V4L>
E	81-557-598-010		UTT+2-5 C-TITE<V4L>
F	87-067-767-019		BVTT+2.6-6<V3L>
G	87-067-058-019		FW,3.2-8-0.5<V4L>

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C5N <WR>)

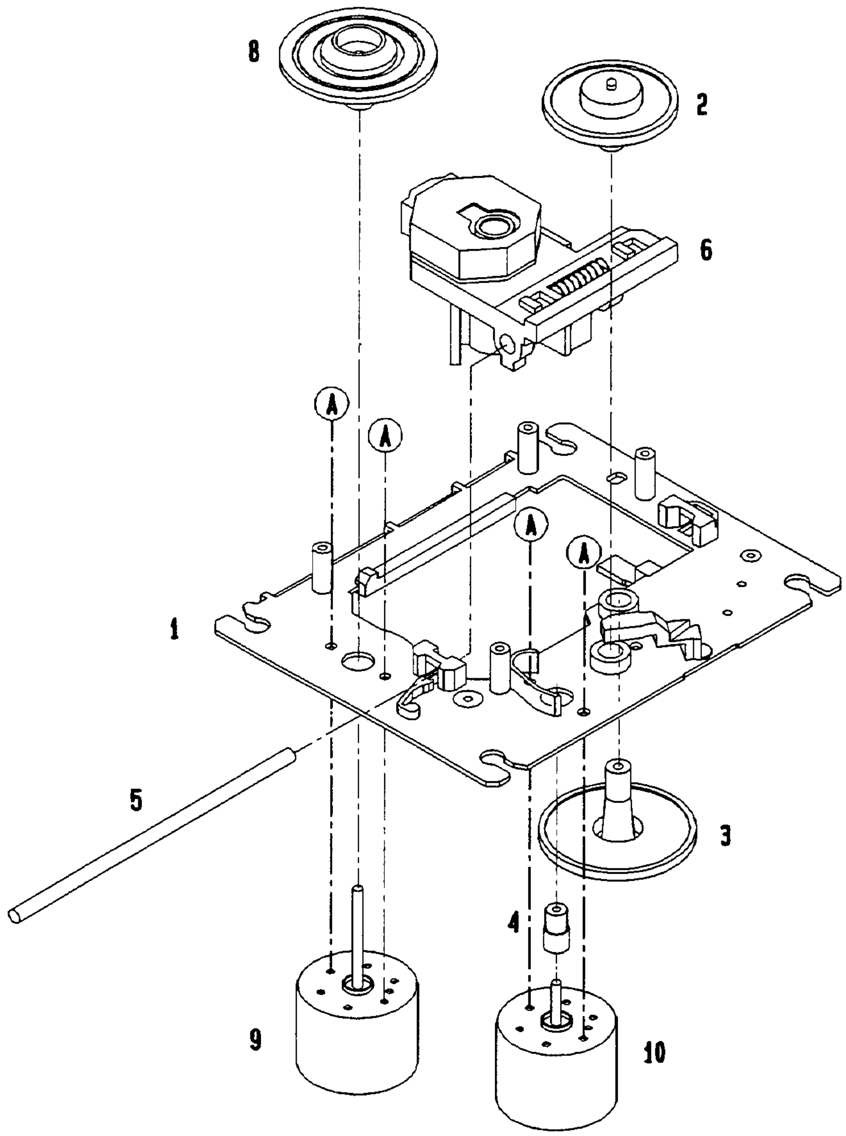


CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C5N <WR>)

DESCRIPTIONで判断できない物は “REFERENCE NAME LIST” を参照してください。
If can't understand for Description please kindly refer to “REFERENCE NAME LIST”.

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S
2	83-ZG2-204-419		GEAR,A
3	83-ZG2-205-219		GEAR,B
4	83-ZG2-220-01K		GEAR MOTOR 2
5	83-ZG2-207-119		SHAFT,SLIDE
6	87-070-445-010		PICK-UP,KSS-213B
8	83-ZG2-227-01K		TURN TABLE,C1
A	87-261-032-219		SCREW V+2-3

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C1N <V3L/V4L/V5>)



CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C1N <V3L/V4L/V5>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION	REF. NO	PART NO.	ｶﾝﾘ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S	6	87-070-445-010		PICK-UP,KSS-213B
2	83-ZG2-204-419		GEAR,A	8	83-ZG2-233-019		TURN TABLE,A5
3	83-ZG2-205-219		GEAR,B	9	87-045-358-019		MOT,RF-310T A 43
4	83-ZG2-220-01K		GEAR MOTOR 2	10	87-045-356-019		MOT,RF-310T A 30
5	83-ZG2-207-119		SHAFT,SLIDE	A	87-261-032-219		SCREW V+2-3

4ZG-1A

ELECTRICAL MAIN PARTS LIST

DESCRIPTIONで判断できない物は“REFERENCE NAME LIST”を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-070-294-019		IC,CXD2508AQ
	87-017-745-019		IC,CXA1782BQ
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
	87-017-802-010		IC,LC7872E<G>
	87-017-803-010		IC,LC32464P-80<G>
TRANSISTOR			
	87-026-239-089		C-TR,DTC114TK
	89-110-373-089		C-TR,2SA1037 S
	89-420-052-089		TR 2SD2005Q (T105)
	89-421-722-389		TR,2SD2172 V/W
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-608-089		C-TR,DTC 123 JK
	89-406-555-089		TR,2SD655E<G>
	87-A30-039-040		C-TR,2SD1383K<D>
DIODE			
	87-020-465-089		DIODE,1SS133
	87-020-330-089		C-DIODE,DAP202K
3CD C.B			
C101	87-010-194-089		C-CAP,S 0.047-25 F
C102	87-010-180-089		C-CAP,S 1500P-50 B
C103	87-018-134-089		CAP,TC-U 0.01-16 Y
C104	87-012-156-089		C-CAP,S 220P-50 CH
C105	87-015-698-049		CAP,E 4.7-50 7L
C106	87-010-060-049		CAP,E 100-16 7L
C107	87-010-197-089		C-CAP,S 0.01-25 B
C108	87-016-461-089		C-CAP,S 0.47-16 F
C109	87-010-197-089		C-CAP,S 0.01-25 B
C115	87-010-318-089		C-CAP,S 47P-50 CH
C116	87-010-318-089		C-CAP,S 47P-50 CH
C117	87-010-197-089		C-CAP,S 0.01-25 B
C118	87-010-260-089		CAP,E 47-25 SME
C119	87-018-134-089		CAP,TC-U 0.01-16 Y<EXCEPT G>
C120	87-018-209-080		CAP,TC-U 0.1-50 F
C121	87-018-134-089		CAP,TC-U 0.01-16 Y
C151	87-010-182-089		C-CAP,S 2200P-50 B
C152	87-010-196-089		C-CAP,S 0.1-25 F
C153	87-010-196-089		C-CAP,S 0.1-25 F
C154	87-010-196-089		C-CAP,S 0.1-25 F
C155	87-010-404-089		CAP,E 4.7-50 SME
C156	87-010-193-089		C-CAP,S 0.033-25 F
C157	87-010-197-089		C-CAP,S 0.01-25 B
C158	87-010-401-089		CAP,E 1-50 SME
C159	87-010-382-089		CAP,E 22-25 SME
C160	87-010-213-089		C-CAP,S 0.015-25 B
C161	87-018-134-089		CAP,TC-U 0.01-16 Y
C162	87-010-263-089		CAP,E 100-10 SME 5X11
C163	87-010-197-089		C-CAP,S 0.01-25 B
C164	87-010-193-089		C-CAP,S 0.033-25 F
C165	87-010-197-089		C-CAP,S 0.01-25 B
C166	87-010-193-089		C-CAP,S 0.033-25 F
C167	87-010-197-089		C-CAP,S 0.01-25 B
C169	87-010-150-089		C-CAP,S 6P-50 CH
C170	87-010-263-089		CAP,E 100-10 SME 5X11
C171	87-010-178-089		C-CAP,S 1000P-50 B
C172	87-010-198-089		C-CAP,S 0.022-25 B
C173	87-010-196-089		C-CAP,S 0.1-25 F
C174	87-010-197-089		C-CAP,S 0.01-25 B
C175	87-010-263-089		CAP,E 100-10 SME 5X11
C176	87-010-248-089		CAP,E 220-10 SME
C177	87-010-197-089		C-CAP,S 0.01-25 B
C178	87-010-260-089		CAP,E 47-25 SME
C179	87-010-196-089		C-CAP,S 0.1-25 F
C180	87-010-196-089		C-CAP,S 0.1-25 F
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		G-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-012-153-089		C-CAP,S 120P-50 CH
C208	87-012-153-089		C-CAP,S 120P-50 CH
C209	87-012-153-089		C-CAP,S 120P-50 CH
C210	87-012-153-089		C-CAP,S 120P-50 CH
C211	87-010-405-049		CAP,E 10-50 SME
C212	87-010-405-049		CAP,E 10-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C231	87-010-112-089		CAP,E 100-16 11L
C232	87-010-060-049		CAP,E 100-16 7L
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-049		CAP,E 470-10 SME
C502	87-010-197-089		C-CAP,S 0.01-25 B
C503	87-010-263-089		CAP,E 100-10 SME 5X11
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-221-049		CAP,E 470-10 SME
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C511	87-010-185-089		C-CAP,S 3900P-50 B
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C604	87-010-137-080		CAP,E,22-16 BP
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-318-089		C-CAP,S 47P-50 CH
C704	87-010-178-089		C-CAP,S 1000P-50 B
C705	87-010-178-089		C-CAP,S 1000P-50 B
C712	87-010-982-049		CAP,E 33-25 GAS
C801	87-010-197-089		C-CAP,S 0.01-25 B<G>
C802	87-010-260-089		CAP,E 47-25 SME<G>
C803	87-010-194-089		C-CAP,S 0.047-25 F<G>
C804	87-010-260-089		CAP,E 47-25 SME<G>
C805	87-018-134-089		CAP,TC-U 0.01-16 Y<G>
C806	87-010-260-089		CAP,E 47-25 SME<G>
C807	87-010-405-089		CAP,E 10-50 SME<G>
C808	87-010-197-089		C-CAP,S 0.01-25 B<G>
C809	87-010-405-049		CAP,E 10-50 SME<G>
C810	87-010-313-089		C-CAP,S 18P-50 CH<G>
C811	87-010-314-089		C-CAP,S 22P-50 CH<G>
C812	87-010-313-089		C-CAP,S 18P-50 CH<G>
C813	87-010-315-089		C-CAP,S 27P-50 CH<G>

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C814	87-010-197-089		C-CAP,S 0.01-25 B<G>
C815	87-010-260-049		CAP,E 47-25 SME<G>
C816	87-010-404-089		CAP,E 4.7-50 SME<G>
C817	87-010-221-089		CAP,E 470-10<G>
C818	87-010-196-089		C-CAP,S 0.1-25 F<G>
C819	87-010-321-089		C-CAP,S 82P-50 CH<G>
C820	87-010-178-089		C-CAP,S 1000P-50 B<G>
C821	87-010-196-089		C-CAP,S 0.1-25 F<G>
C822	87-010-197-089		C-CAP,S 0.01-25 B<G>
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
CON2	84-ZG1-616-019		CONN ASSY,6P H
EMI801	87-008-474-089		F-BEAD,EMI BL02RN1<G>
EMI802	87-008-474-089		F-BEAD,EMI BL02RN1<G>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
J801	87-009-502-010		JACK,PIN 1PY EARTH<G>
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-305-019		MOTOR, RF-500TB
R177	87-022-365-089		C-RES,S 100K-1/10W F
R178	87-022-363-089		C-RES,S 68K-1/10W F
R179	87-022-363-089		C-RES,S 68K-1/10W F
R180	87-022-363-089		C-RES,S 68K-1/10W F
R181	87-022-363-089		C-RES,S 68K-1/10W F
R182	87-022-365-089		C-RES,S 100K-1/10W F
R401	87-022-186-089		C-RES,82-1/4W J
R403	87-022-186-089		C-RES,82-1/4W J
SFR151	87-024-175-089		SFR,47K DIA6 V
SFR152	87-024-176-089		SFR,100K DIA6 V
SFR153	87-024-176-089		SFR,100K DIA6 V

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
X801	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>
X802	80-JUC-601-089		VIB,XTAL 14.31MHZ<G>

LED C.B

LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1

T-T C.B

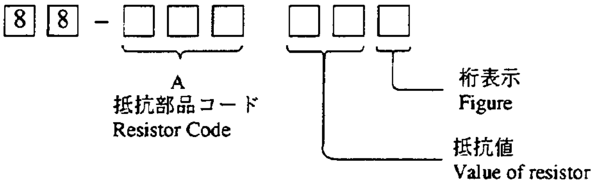
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V

MOTOR C.B

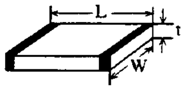
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm) 外形／Form	L	W	t	抵抗コード ：A Resistor Code: A
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

■ IC DESCRIPTION

CXA1782BQ .... See page 64

LC7872E .... See page 62

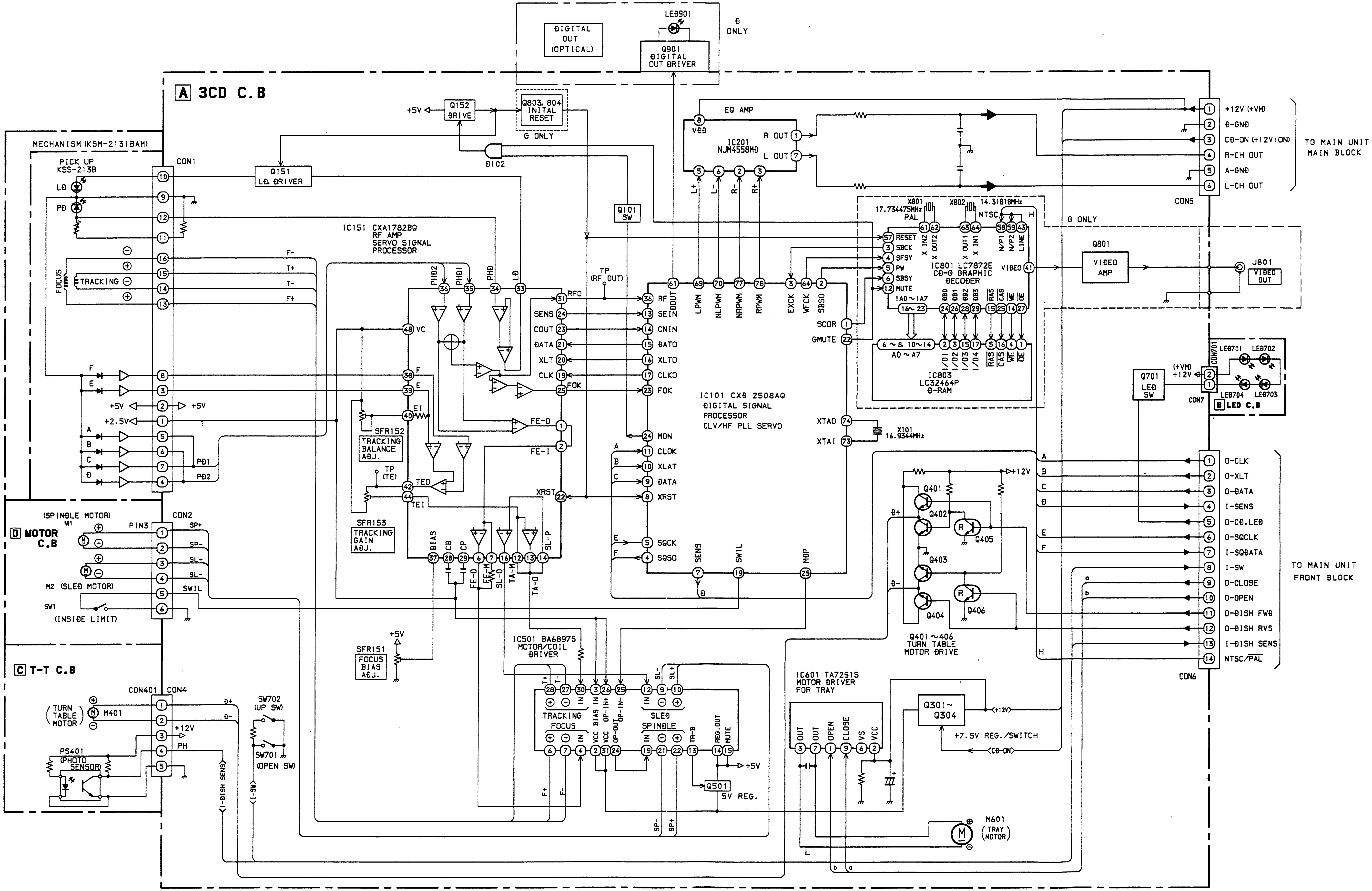
■ MECHANICAL EXPLODED VIEW 1／1

See page 95

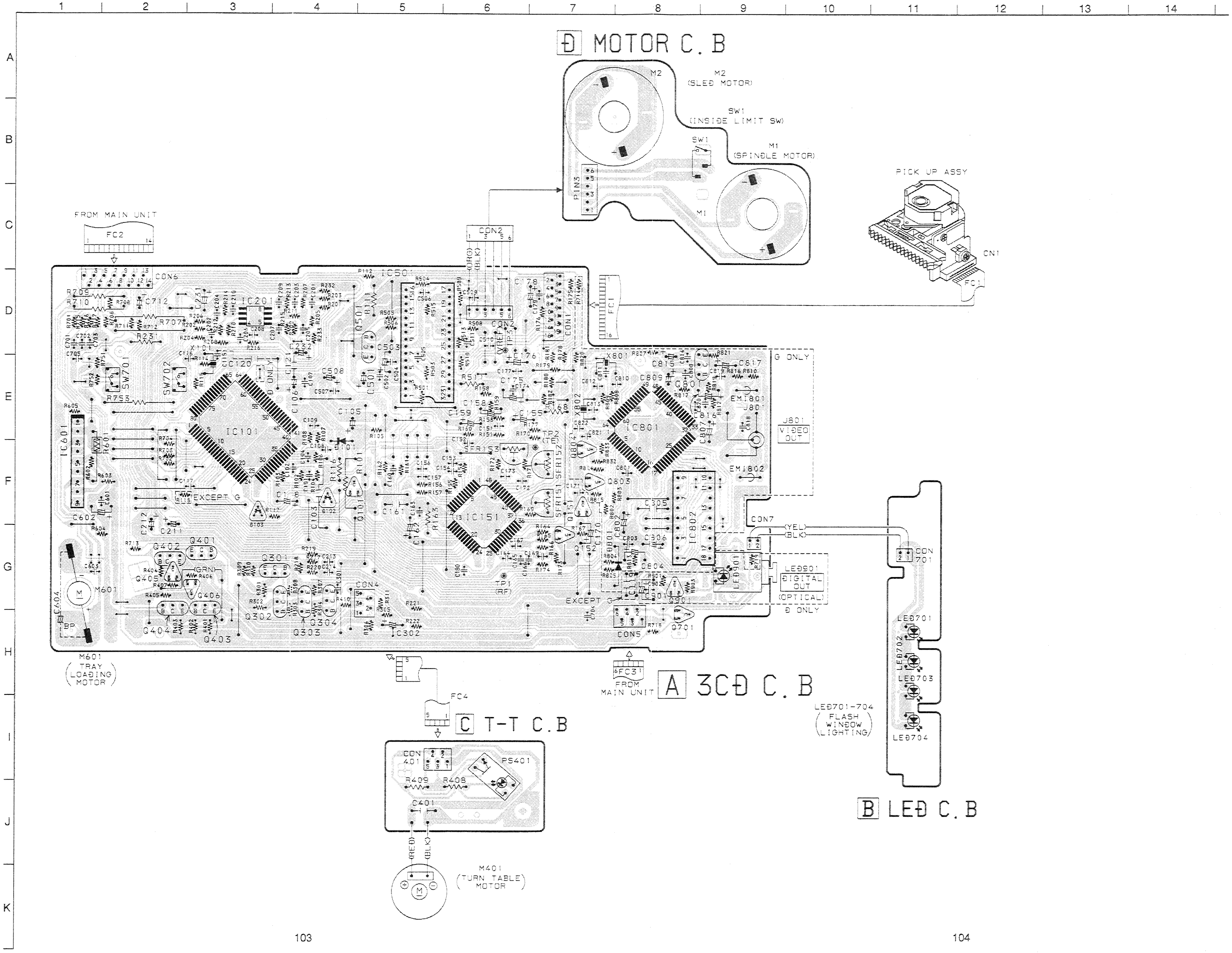
■ MECHANICAL PARTS LIST 1／1

See page 96

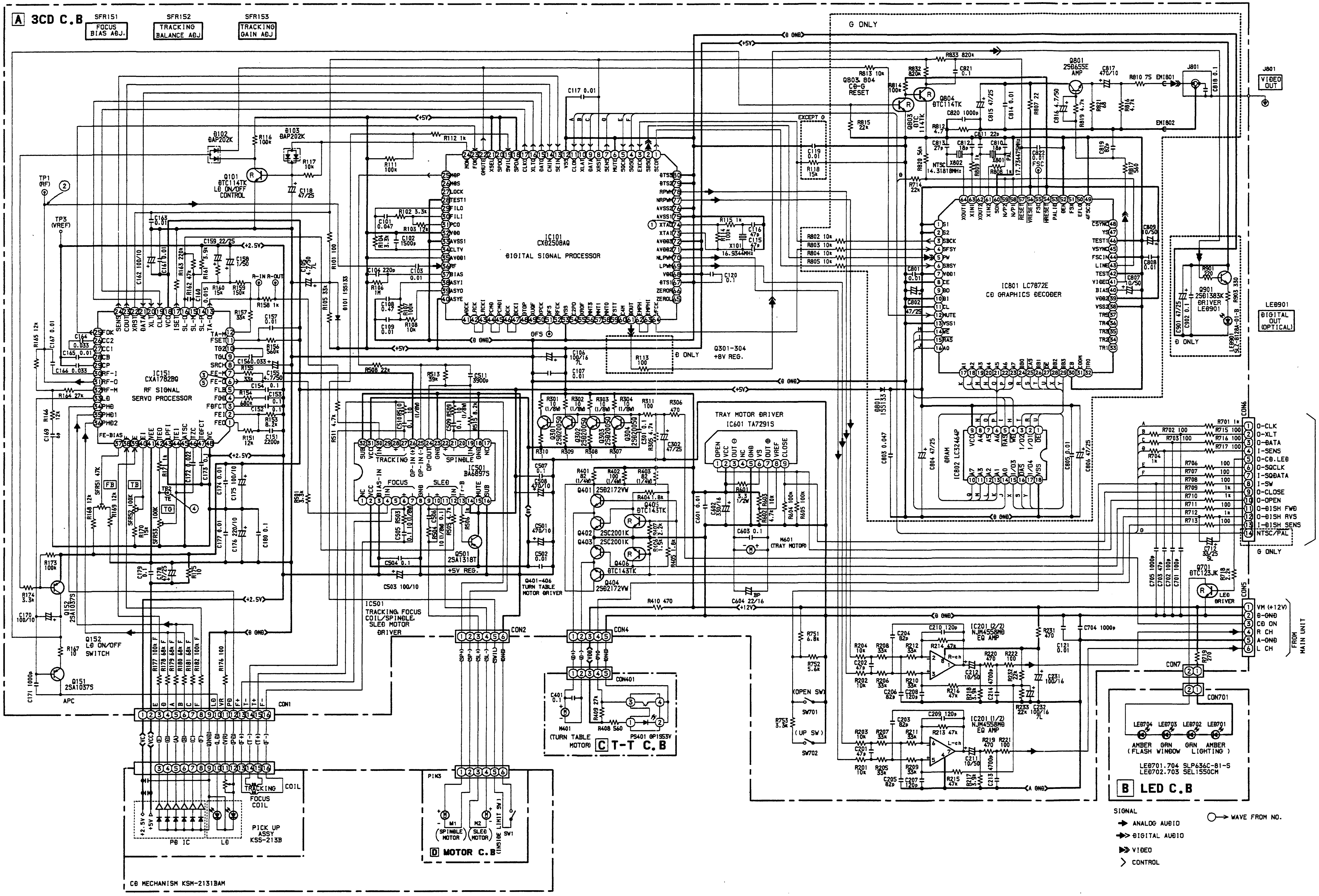
BLOCK DIAGRAM


A 3CD C.B
MECHANISM (KSM-2131BAM)
PICK UP KSS-213B
LD
PD
FOCUS
TRACKING
CON1
Q151 LD DRIVER
Q152 DRIVE
+5V
Q803, 804 INITAL RESET
G ONLY
D102
DIGITAL OUT (OPTICAL)
LED901
Q901 DIGITAL OUT DRIVER
D ONLY
IC151 CXA1782BQ RF AMP SERVO SIGNAL PROCESSOR
F-
T+
T-
F+
PHD2
PHD1
PHD
LD
RFO
TP (RF OUT)
SENS
COUT
DATA
XLT
CLK
FOK
VC
FE-O
FE-I
TEO
TEI
XRST
BIAS
CB
CP
FE-O
FE-M
SL-O
TA-M
TA-O
SL-P
SFR152 TRACKING BALANCE ADJ.
SFR153 TRACKING GAIN ADJ.
TP (TE)
SFR151 FOCUS BIAS ADJ.
+2.5V
Q101 SW
EQ AMP
IC201 NJM4558MD
VDD
R OUT
L OUT
L+
L-
R-
R+
IC101 CXD 2508AQ DIGITAL SIGNAL PROCESSOR CLV/HF PLL SERVO
RF
SEIN
CNIN
DATO
XLTO
CLKO
FOK
MON
CLOK
XLAT
DATA
XRST
SQCK
SQSO
DOUT
LPWM
NLPWM
NRPWM
RPWM
EXCK
WFCK
SBSO
SCOR
GMUTE
XTAO
XTAI
X101 16.9344MHz
SENS
SWIL
MDP
X801 17.734475MHz PAL
X802 14.31818MHz NTSC
IC801 LC7872E CD-G GRAPHIC DECODER
RESET
SBCK
SFSY
PW
SBSY
MUTE
IA0~IA7
X IN2
X OUT2
X OUT1
X IN1
N/P1
N/P2
LINE
VIDEO
DB0
DB1
DB2
DB3
RAS
CAS
WE
OE
IC803 LC32464P D-RAM
A0~A7
I/O1
I/O2
I/O3
I/O4
G ONLY
Q801 VIDEO AMP
J801 VIDEO OUT
CON5
+12V (+VM)
D-GND
CD-ON (+12V:ON)
R-CH OUT
A-GND
L-CH OUT
TO MAIN UNIT MAIN BLOCK
CON701
LED701
LED702
LED704
LED703
CON7
B LED C.B
Q701 LED SW
(+VM) +12V
CON6
O-CLK
O-XLT
O-DATA
I-SENS
O-CD.LED
O-SQCLK
I-SQDATA
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
NTSC/PAL
TO MAIN UNIT FRONT BLOCK
Q401
Q402
Q403
Q404
Q405
Q406
Q401~406 TURN TABLE MOTOR DRIVE
+12V
D+
D-
D MOTOR C.B
(SPINDLE MOTOR) M1
PIN3
CON2
SP+
SP-
SL+
SL-
SWIL
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT)
C T-T C.B
CON401
CON4
TURN TABLE MOTOR
M401
+12V
PH
PS401 (PHOTO SENSOR)
SW702 (UP SW)
SW701 (OPEN SW)
I-DISH SENS
I-SW
IC501 BA6897S MOTOR/COIL DRIVER
TRACKING
FOCUS
SLED
SPINDLE
VCC
BIAS IN
OP-IN+
OP-OUT
OP-IN-
TR-B
REG OUT
MUTE
F+
F-
SP-
SP+
Q501 5V REG.
+5V
IC601 TA7291S MOTOR DRIVER FOR TRAY
OUT
OUT
OPEN
CLOSE
VS
VCC
Q301~Q304
+7.5V REG./SWITCH
(CD-ON)
M601 (TRAY MOTOR)

WIRING


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
Ð MOTOR C. B
M2
M2 (SLEÐ MOTOR)
SW1 (INSIÐE LIMIT SW)
SW1
M1 (SPINÐLE MOTOR)
M1
PIN3
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON2
(ORG)
(BLK)
CON1
IC50
IC201
IC120
IC101
IC151
IC601
IC801
IC802
SW701
SW702
Q501
Q401
Q402
Q405
Q406
Q404
Q403
Q301
Q302
Q303
Q304
Q101
CON4
TP1 (RF)
TP2 (TE)
X101
X801
X802
J801
J801 VIDEO OUT
G ONLY
EXCEPT G
Ð ONLY
EM1801
EM1802
CON7
(YEL)
(BLK)
CON 701
LEÐ901
LEÐ901 ÐIGITAL OUT (OPTICAL)
Q901
Q701
CON5
FC3
FROM MAIN UNIT
A 3CÐ C. B
M601
M601 TRAY LOAÐING MOTOR
FC4
C T-T C. B
CON 401
PS401
R409
R408
C401
(REÐ)
(BLK)
M401 (TURN TABLE MOTOR)
LEÐ701
LEÐ702
LEÐ703
LEÐ704
LEÐ701-704 (FLASH WINÐOW LIGHTING)
B LEÐ C. B

SCHEMATIC DIAGRAM

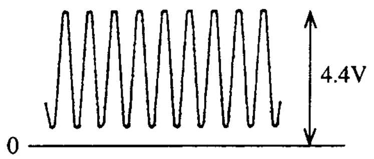


A 3CD C.B
SFR151 FOCUS BIAS ADJ.
SFR152 TRACKING BALANCE ADJ
SFR153 TRACKING GAIN ADJ
G ONLY
EXCEPT G
IC101 CXD2508AQ DIGITAL SIGNAL PROCESSOR
IC151 CXA1782BQ RF SIGNAL SERVO PROCESSOR
IC801 LC7872E CD GRAPHICS DECODER
IC802 LC3244P DRAM
IC501 BA6897S
IC501 TRACKING, FOCUS COIL/SPINDLE, SLED MOTOR DRIVER
TRAY MOTOR DRIVER IC601 TA7291S
M601 (TRAY MOTOR)
Q101 DTC114TK LD ON/OFF CONTROL
Q152 LD ON/OFF SWITCH
Q151 2SA1037S APC
Q301-304 +8V REG.
Q501 2SA1318T +5V REG.
Q401-406 TURN TABLE MOTOR DRIVER
Q801 2SB655E AMP
Q803, 804 CD-G RESET
Q901 2SB1383K DRIVER LED901
Q701 DTC123JK LED DRIVER
TP1 (RF)
TP3 (VREF)
X101 16.9344MHz
NTSC 14.31818MHz
PAL 17.734475MHz
J801 VIDEO OUT
LED901 DIGITAL OUT (OPTICAL)
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD EQ AMP
CON1
CON2
CON4
CON5
CON6
CON7
CON401
CON701
CN401
M401 (TURN TABLE MOTOR)
PS401 GP1S53V
C T-T C.B
OPEN SW SW701
UP SW SW702
FROM MAIN UNIT.
FROM MAIN UNIT
PICK UP ASSY KSS-213B
PD IC
LD
TRACKING COIL
FOCUS COIL
CD MECHANISM KSM-2131BAM
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
D MOTOR C.B
LED704 LED703 LED702 LED701
AMBER GRN GRN AMBER
(FLASH WINDOW LIGHTING)
LED701.704 SLP636C-81-S
LED702.703 SEL1550CM
B LED C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
WAVE FROM NO.

WAVE FORM

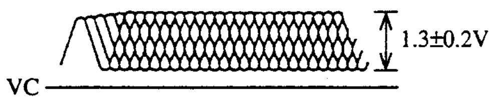
① SYSTEM CLOCK
IC101 Pin (74) (XTAO)
f=16.9344MHz

VOLT/DIV: 2V
TIME/DIV: 0.1µS



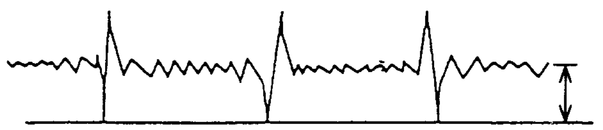
② RF
TP1 (RF)

VOLT/DIV: 500mV
TIME/DIV: 0.5µS



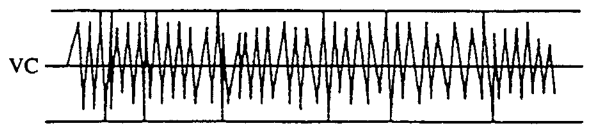
③ Focus
IC151 Pin ⑥ (FE-O)

VOLT/DIV: 200mV
TIME/DIV: 2mS

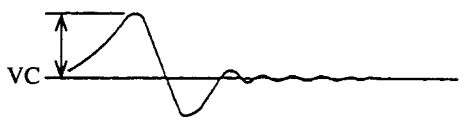


④ Tracking
TP2 (TE)

TIME/DIV: 1mS

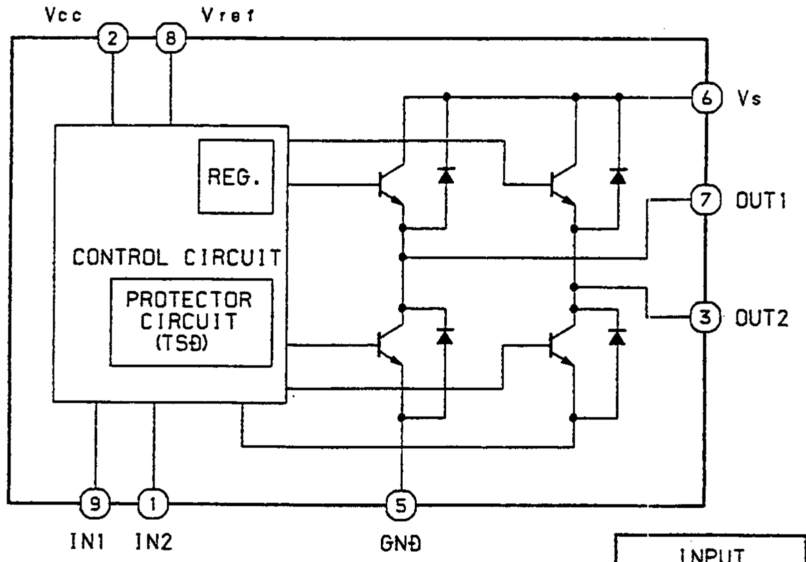


⑤ Focus Search
IC151 Pin ⑥ (FE-O)



IC BLOCK DIAGRAM

IC, TA7291



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

IC DESCRIPTION

IC, CXD2508AQ

Pin No.	Pin name	I/O	Description
1	SCOR	O	1H when the subcode sync S0 or S1 is detected.
2	SBSO	O	SUBP~W serial output.
3	EXCK	I	Clock input for SBSO read out.
4	SQSO	O	SUBQ 80-bit serial output.
5	SQCK	I	Clock input for SQSO read out.
6	MUTE	I	H to mute. L to cancel.
7	SENS	O	SENS signal output to CPU.
8	XRST	I	System reset. L to reset.
9	DATA	I	Serial data input from CPU .
10	XLAT	I	Latch input from CPU. Latching serial data at fall down.
11	CLOK	I	Clock input from CPU to transfer serial data.
12	VSS	—	GND.
13	SEIN	I	SENS input from SSP.
14	CNIN	I	Numbers of track jump are counted and input.
15	DATO	O	Serial data output to SSP.
16	XLTO	O	Serial data latched output to SSP. Latched at fall down edge.
17	CLKO	O	Clock input from SSP to transfer serial data.
18, 20	SPOA, C	I	Microprocessor expansion interface.
19	XTSL	I	X'tal selection input terminal. "L" at 16.9344MHz X'tal. "H" at 33.86888MHz.
22	XLON	O	Microprocessor expansion interface.
23	FOK	I	Focus OK input pin. Used for SENS output and servo auto sequencer.
24	MON	O	Spindle motor ON/OFF control output.
25	MDP	O	Spindle motor servo control output.
26	MDS	O	Spindle motor servo control output.
27	LOCK	O	GFS is sampled by 460Hz. H output when GFS is H. L output when GFS is L for 8 consecutive times.
28	TEST1	I	TEST. (Connected to GND)
29	FILO	O	Filter output to master PLL. (slave=digital PLL)
30	FILI	I	Filter input to master PLL.
31	PCO	O	Charge-pump output to master PLL.
32	VDD	—	Power supply input. (+5V)
33	AVSS1	—	GND.
34	CLTV	I	VCO control voltage input to master PLL.
35	AVDD1	—	Power supply input. (+5V)
36	RF	I	EFM signal input.
37	BIAS	I	Constant current input to asymmetry correction circuit.
38	ASYI	I	Comparate voltage input to asymmetry correction circuit.
39	ASYO	O	EFM full swing output. (L=VSS, H=VDD)
40	ASYE	I	L: asymmetry correction OFF. H: asymmetry correction ON
41	WDCK	O	D/A interface, word clock (2Fs) for 48-bit slot.
42	LRCK	O	D/A interface, LR clock (Fs) for 48-bit slot.

Pin No.	Pin name	I/O	Description
43	LRCKI	I	LR clock input to DAC. (48-bit slot)
44	PCMD	O	D/A interface, serial data. (2's complement, MSB first)
45	PCMDI	I	Audio data input to DAC. (48-bit slot)
46	BCK	O	D/A interface, bit clock.
47	BCKI	I	Bit clock input to DAC. (48-bit slot)
48	GTOP	O	GTOP output.
49	XUGF	O	XUFG output.
50	XPCK	O	XPLCK output.
51	GFS	O	GFS output.
52	RFCK	O	RFCK output.
53	VSS	—	GND.
54	C2PO	O	C2PO output.
55	XROF	O	XRAOF output.
56	MNT3	O	MNT3 output.
57	MNT1	O	MNT1 output.
58	MNT0	O	MNT0 output.
59	FSTT	O	Pins-73 and -74 divided-by 2/3 output.
60	C4M	O	4.2336MHz output.
61	DOUT	O	Digital Out connector output signal.
62	EMPH	O	H when the playback disc has emphasis. L when it does not.
63	EMPHI	I	DAC emphasis ON/OFF. H when ON. L when OFF
64	WFCK	O	WFCK (WRITE FRAME CLOCK) output.
65	ZEROL	O	No sound data detection output. H (L-ch) when no sound data is detected.
66	ZEROR	O	No sound data detection output. H (R-ch) when no sound data is detected.
67	DTSI	I	TEST for DAC. (Normally "L")
68	VDD	—	Power supply input. (+5V)
69	NLPWM	O	L-ch PWM output. (reversed polarity)
70	LPWM	O	L-ch PWM output. (normal polarity)
71	AVDD2	—	Power supply input to L-ch PWM driver. (Connected to +5V)
72	AVDD3	—	Power supply input to X'tal. (Connected to +5V)
73	XTAI	I	X'tal input to 33.8688MHz oscillator circuit.
74	XTAO	O	33.8688MHz X'tal oscillator circuit output.
75	AVSS1	—	GND input to X'tal. (Connected GND)
76	AVSS2	—	GND input to PWM driver. (Connected to GND)
77	NRPWM	O	R-ch PWM output. (reversed phase)
78	RPWM	O	R-ch PWM output. (normal phase)
79	DTS2	I	TEST-2 for DAC. (Normally "L")
80	DTS3	I	TEST-3 for DAC. (Normally "L")

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button)
   - Press the power switch button.
   - Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

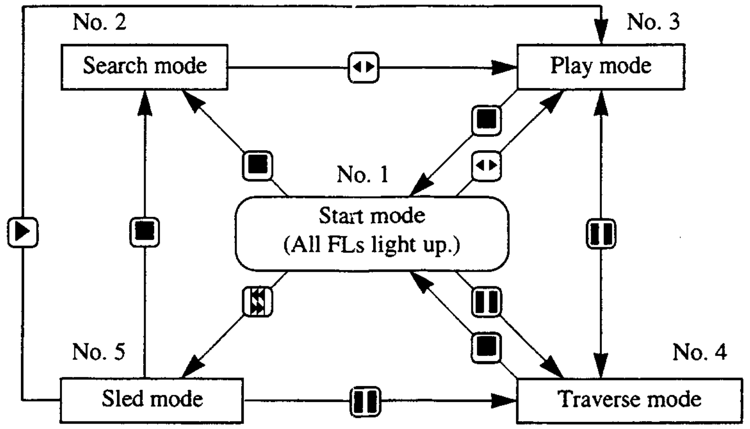
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • Laser diode turns always ON. (CD block power is ON.)	• FL display check (All displays light.) • APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.)
Search mode No.2	■ key	CD--	• Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD11	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	❚❚ key	CD11	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

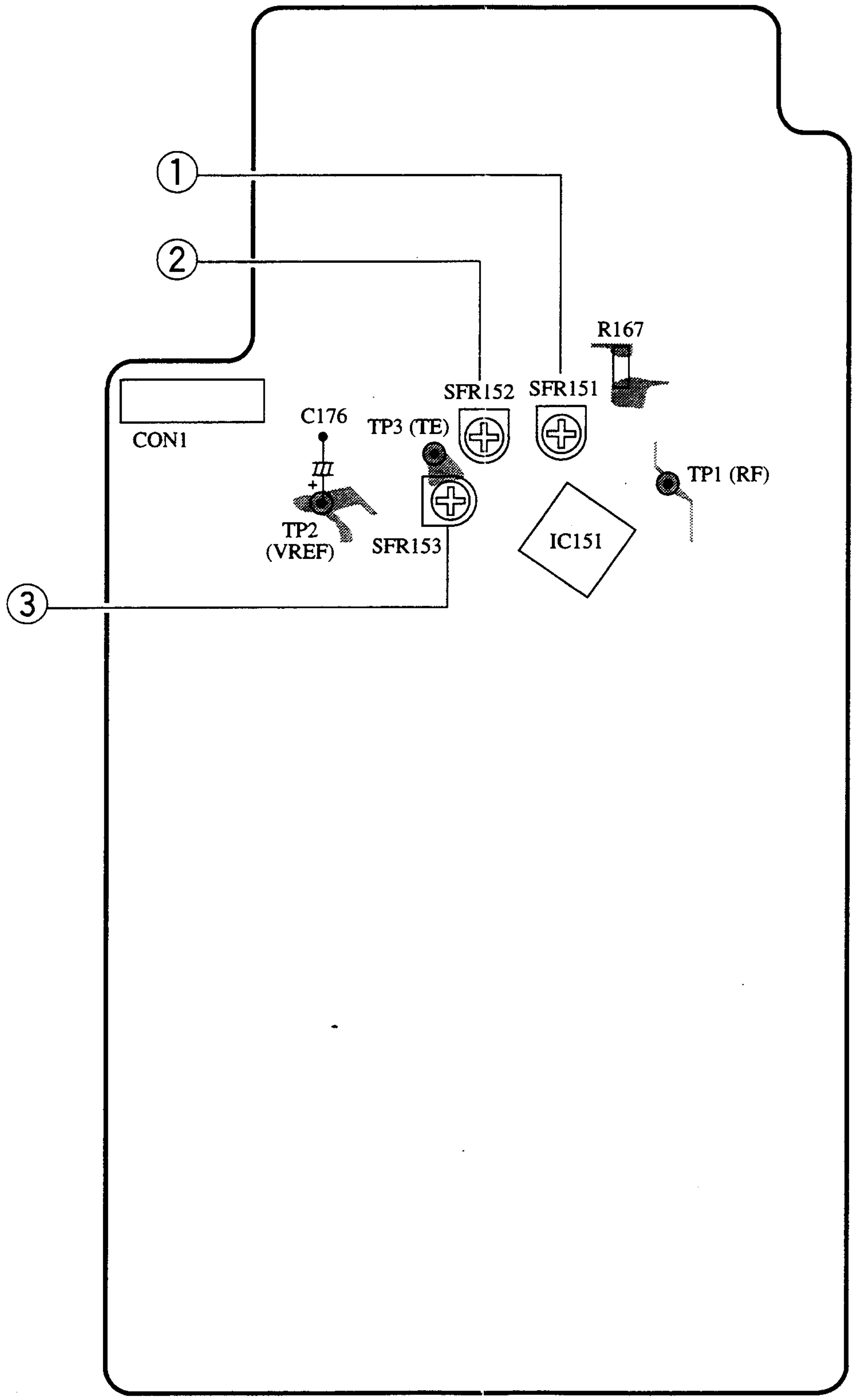
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



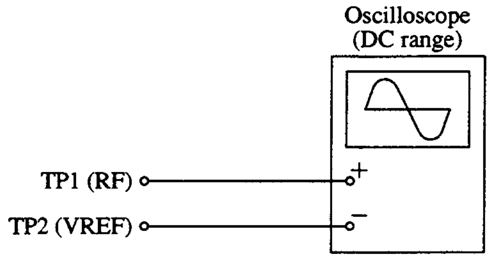
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

A 3CD C.B (PATTERN SIDE)

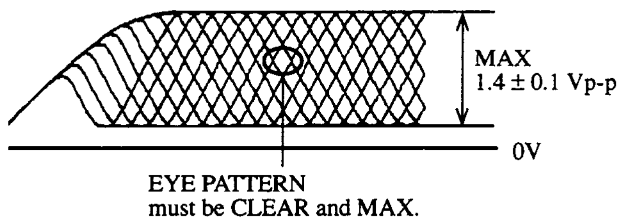


Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP2 (VREF).

1. Focus Bias Adjustment
   Make the focus bias adjustment when replacing and repairing the optical block.

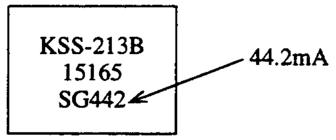


1) Connect an oscilloscope to test points TP1 (RF) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
4) Adjust SFR151 so that RF signal of test point TP1 (RF) is MAX and CLEARREST.



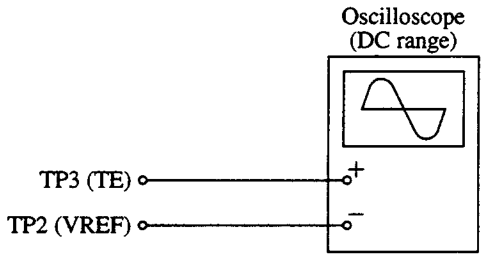
VOLT/DIV: 0.5 V
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R167 (10Ω). The difference for the specified value shown on the lavel must be within±6.0mA.

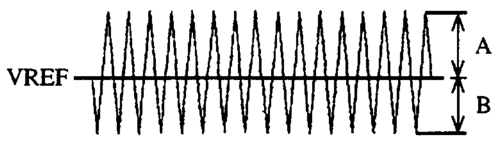


$$\text{Laser current Iop} = \frac{\text{Voltage across R167}}{10\Omega}$$

2. Tracking Balance Adjustment



1) Connect an oscilloscope to test points TP3 (TE) and TP2 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and press the PLAY button.
4) Adjust SFR153 to reduce the tracking gain.
5) Adjust SFR152 so that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.



A=B

VOLT/DIV: 20mV
TIME/DIV: 1mS

3. Tracking Gain Adjustment

   A servo analyzer is necessary in order to perform this adjustment exactly. However, this gain has a margin, so even if it is slightly off, there is no problem. Therfore, do not perform this adjustment.
   Focus/tracking gain determines the pick-up follow-up (vertical and horizontal) relative to mechanical noise and mechanical shock when 2-axis device operates. However, as these reciprocate, the adjustment is at the point where both are satisfied.

- When gain is raised, the noise increases when the 2-axis device operates.
- When gain is lowered, it is more susceptible to mechanical shock and skipping occurs more easily.
  When the gain adjustment is off, the symptoms below appear.

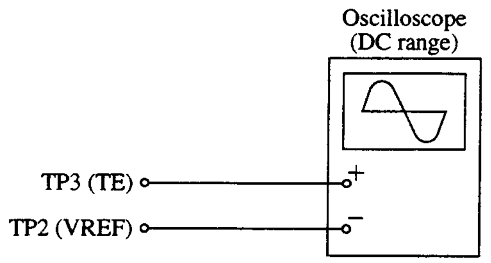
Gain / Symptoms	(Focus)	Tracking
● The time until music starts becomes longer for STOP→ ▶PLAY or automatic selection (|◀◀, ▶▶| buttons pressed.) (Normally takes about 2 seconds.)	low	low or high
● Music does not start and disc continues to rotate for STOP→▶PLAY or automatic selection (|◀◀, ▶▶| buttons pressed.)	——	low
● Disc stops to rotate shortly after STOP→▶PLAY.	low or high	——
● Sound is interrupted during PLAY. Or time counter display stops.	——	low
● More noises during the 2-axis device operation.	high	high

The following is simple adjustment method.

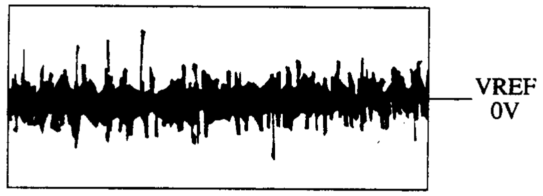
— Simple adjustment —

Note: Since the exact adjustment cannot be performed, remember the positions of the controls before the performing the adjustment. If the positions after the simple adjustment are only a little different, return the controls to the original position.

Procedure:



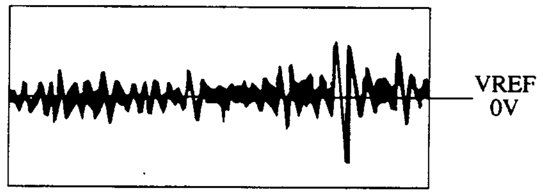
1) Keep the set horizontal. (If the set is not kept horizontally, this adjustment cannot be performed due to the gravity against the 2-axis device.)
2) Insert test disc TCD-782 (YEDS-18) and play back the second composition.
3) Connect an oscilloscope to TP3 (TE), TP2 (VREF) of the CD C.B.
4) Adjust SFR153 so that the waveform appears as shown in the figure below. (tracking gain adjustment)



VOLT/DIV: 50mV
TIME/DIV: 1mS

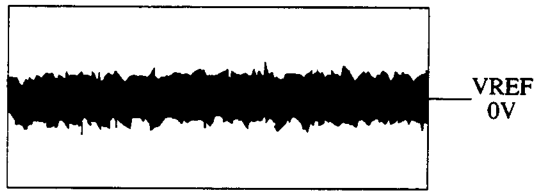
- Incorrect example

Low tracking gain
(The fundamental wave appears as compared with the waveform adjusted.)



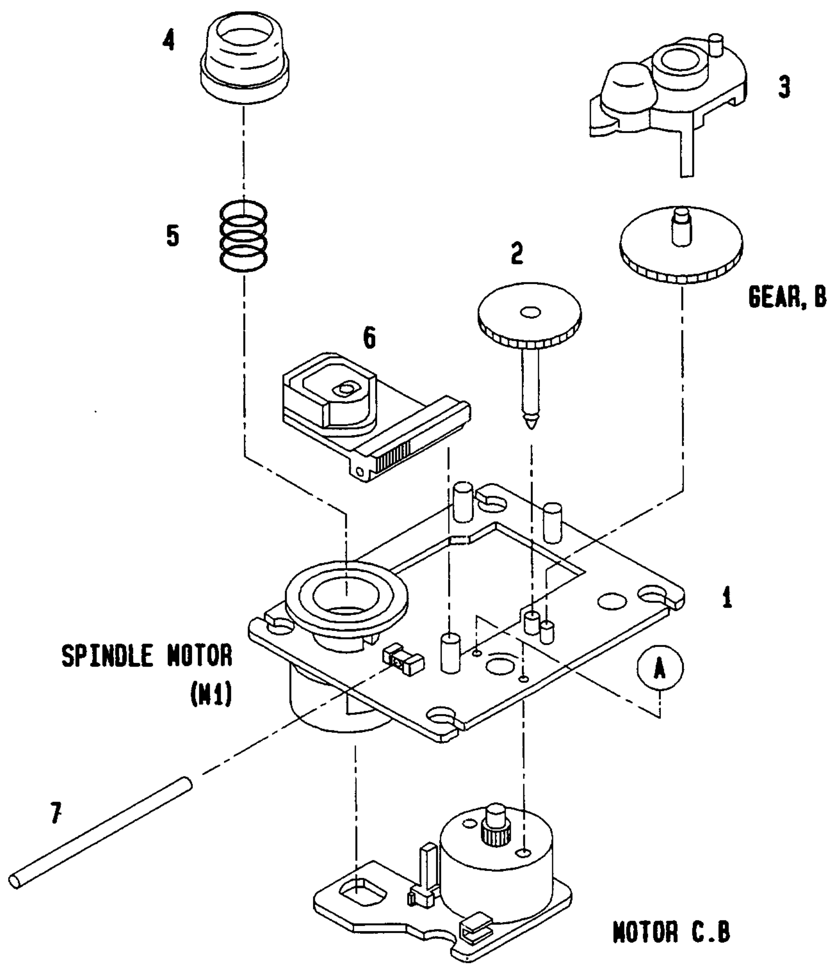
VOLT/DIV: 50mV
TIME/DIV: 1mS

High tracking gain
(The frequency of the fundamental wave is higher than that in low gain.)



VOLT/DIV: 50mV
TIME/DIV: 1mS

CD MECHANISM EXPLODED VIEW 1 ／ 1 (KSM-2131BAM <A, B>)



CD MECHANISM PARTS LIST 1 ／ 1 (KSM-2131BAM <A, B>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	- - -		MOTOR CHASSIS ASSY
2	92-625-188-020		GEAR(A)
3	92-625-544-010		COVER
4	92-625-186-020		RING CENTER C
5	92-625-191-010		SPRING COMPRESSION
6	87-070-445-010		OPTICAL PICK UP KSS-213B
7	94-917-565-010		SHAFT SLED
A	87-261-032-210		V+2-3

4ZG-1B

ELECTRICAL MAIN PARTS LIST

DESCRIPTION で判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

IC

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
	87-070-336-019		IC,TC 9284 BF
	87-002-407-019		IC TA8191F
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
	87-017-802-010		IC,LC7872E<G>
	87-017-803-010		IC,LC32464P-80<G>

TRANSISTOR

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
	87-026-297-089		C-TR,DTA144TK
	89-110-373-089		C-TR,2SA1037 S
	89-420-052-089		TR 2SD2005Q (T105)
	89-421-722-389		TR,2SD2172 V/W
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-608-089		C-TR,DTC 123 JK
	89-406-555-089		TR,2SD655E<G>
	87-026-239-089		C-TR,DTC114TK<G>
	89-327-125-089		C-TR,2SC2712GR<D>

DIODE

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
	87-020-465-089		DIODE,1SS133

3CD C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C101	87-015-819-089		CHIP CAP 0.01
C102	87-015-819-089		CHIP CAP 0.01
C103	87-015-676-089		CAP,E 47-6.3 7L
C104	87-015-676-089		CAP,E 47-6.3 7L
C106	87-010-197-089		C-CAP,S 0.01-25 B
C107	87-010-404-089		CAP,E 4.7-50 SME
C108	87-010-197-089		C-CAP,S 0.01-25 B
C109	87-010-248-049		CAP,E 220-10 SME
C110	87-010-263-049		CAP,E 100-10
C111	87-010-309-089		C-CAP,1000P-50 CH
C112	87-010-197-089		C-CAP,S 0.01-25 B
C113	87-010-184-089		C-CAP,S 3300P-50 B
C114	87-010-060-049		CAP,E 100-16 7L
C115	87-010-197-089		C-CAP,S 0.01-25 B
C116	87-010-197-089		C-CAP,S 0.01-25 B
C117	87-010-322-089		C-CAP,S 100P-50 CH
C120	87-010-314-089		C-CAP,S 22P-50 CH
C121	87-010-314-089		C-CAP,S 22P-50 CH
C123	87-010-197-089		C-CAP,S 0.01-25 B
C124	87-010-184-089		C-CAP,S 3300P-50 B
C125	87-010-805-089		C-CAP,S 1-16F
C126	87-018-134-089		CAP,TC-U 0.01-16 Y<EXCEPT G>
C127	87-010-196-089		C-CAP,S 0.1-25 F
C152	87-010-196-089		C-CAP,S 0.1-25 F
C153	87-010-154-089		C-CAP,S 10P-50 CH
C154	87-010-322-089		C-CAP,S 100P-50 CH
C155	87-010-263-089		CAP,E 100-10 SME 5X11
C156	87-010-197-089		C-CAP,S 0.01-25 B
C157	87-012-141-089		C-CAP,S 0.22-16 F
C158	87-010-545-049		CAP E 0.22-50 SME
C159	87-015-683-080		CAP,E 33-16 7L
C160	87-010-193-089		C-CAP,S 0.033-25 F
C161	87-010-197-089		C-CAP,S 0.01-25 B
C162	87-010-248-089		CAP,E 220-10 SME
C163	87-010-260-089		CAP,E 47-25 SME
C164	87-010-403-089		CAP,E 3.3-50 SME
C165	87-010-213-089		C-CAP,S 0.015-25 B
C166	87-010-187-089		C-CAP,S 5600P-50 B
C167	87-012-365-089		C-CAP,S 0.027-25V BK
C168	87-010-189-089		C-CAP,S 8200P-50 B
C169	87-015-883-089		C-CAP 0.022-25BK
C170	87-010-320-089		C-CAP,S 68P-50 CH
C171	87-010-382-089		CAP,E 22-25 SME
C172	87-010-197-089		C-CAP,S 0.01-25 B
C173	87-010-263-089		CAP,E 100-10 SME 5X11
C174	87-010-178-089		C-CAP,S 1000P-50 B
C175	87-010-805-089		C-CAP,S 1-16F
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	.87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		C-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-012-153-089		C-CAP,S 120P-50 CH
C208	87-012-153-089		C-CAP,S 120P-50 CH
C209	87-012-153-089		C-CAP,S 120P-50 CH
C210	87-012-153-089		C-CAP,S 120P-50 CH
C211	87-010-405-049		CAP,E 10-50 SME
C212	87-010-405-049		CAP,E 10-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C231	87-010-112-089		CAP,E 100-16
C232	87-010-060-049		CAP,E 100-16 7L
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-049		CAP,E 470-10 SME
C502	87-010-197-089		C-CAP,S 0.01-25 B
C503	87-010-263-089		CAP,E 100-10 SME 5X11
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C508	87-010-221-049		CAP,E 470-10 SME
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-318-089		C-CAP,S 47P-50 CH
C704	87-010-178-089		C-CAP,S 1000P-50 B
C705	87-010-178-089		C-CAP,S 1000P-50 B
C712	87-010-982-049		CAP,E 33-25 GAS
C801	87-010-197-089		C-CAP,S 0.01-25 B<G>
C802	87-010-260-089		CAP,E 47-25 SME<G>
C803	87-010-194-089		C-CAP,S 0.047-25 F<G>
C804	87-010-260-089		CAP,E 47-25 SME<G>
C805	87-018-134-089		CAP,TC-U 0.01-16 Y<G>
C806	87-010-260-089		CAP,E 47-25 SME<G>
C807	87-010-405-089		CAP,E 10-50 SME<G>
C808	87-010-197-089		C-CAP,S 0.01-25 B<G>
C809	87-010-405-049		CAP,E 10-50 SME<G>
C810	87-010-313-089		C-CAP,S 18P-50 CH<G>
C811	87-010-314-089		C-CAP,S 22P-50 CH<G>
C812	87-010-313-089		C-CAP,S 18P-50 CH<G>
C813	87-010-315-089		C-CAP,S 27P-50 CH<G>
C814	87-010-197-089		C-CAP,S 0.01-25 B<G>
C815	87-010-260-049		CAP,E 47-25 SME<G>
C816	87-010-404-089		CAP,E 4.7-50 SME<G>
C817	87-010-221-089		CAP,E 470-10<G>
C818	87-010-196-089		C-CAP,S 0.1-25 F<G>
C819	87-010-321-089		C-CAP,S 82P-50 CH<G>
C820	87-010-178-089		C-CAP,S 1000P-50 B<G>
C821	87-010-196-089		C-CAP,S 0.1-25 F<G>
C822	87-010-403-089		CAP,E 3.3-50 SME<G>
C824	87-018-134-089		CAP,TC-U 0.01-16 Y
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
CON2	84-ZG1-616-019		CONN ASSY,6P H
EMI801	87-008-474-089		F-BEAD,EMI BL02RN1<G>
EMI802	87-008-474-089		F-BEAD,EMI BL02RN1<G>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
J801	87-009-502-010		JACK,PIN 1PY EARTH<G>
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-305-019		MOTOR, RF-500TB
R184	87-022-361-089		C-RES,S 47K-1/10W F
R185	87-022-361-089		C-RES,S 47K-1/10W F
R186	87-022-361-089		C-RES,S 47K-1/10W F
R187	87-022-361-089		C-RES,S 47K-1/10W F
R188	87-022-361-089		C-RES,S 47K-1/10W F
R189	87-022-361-089		C-RES,S 47K-1/10W F
R401	87-022-186-089		C-RES,82-1/4W J
R403	87-022-186-089		C-RES,82-1/4W J
SFR151	87-024-176-089		SFR,100K DIA6 V
SFR152	87-024-171-089		SFR 4.7K DIA6 V
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
X801	80-JUC-602-089		VIB,XTAL 17.73MHZ<G>
X802	80-JUC-601-089		VIB,XTAL 14.31MHZ<G>

LED C.B

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1

T-T C.B

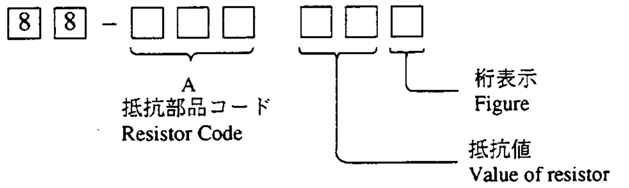
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V

MOTOR C.B

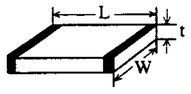
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
M2	9X-262-513-210		SLED MOTOR ASSY
PIN3	91-564-722-110		CONNECTOR 6P
SW1	91-572-085-110		LEAF SW

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding



チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード :A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

■ IC DESCRIPTION

LC7872E .... See page 62

■ MECHANICAL EXPLODED VIEW 1／1

See page 95

■ MECHANICAL PARTS LIST 1／1

See page 96

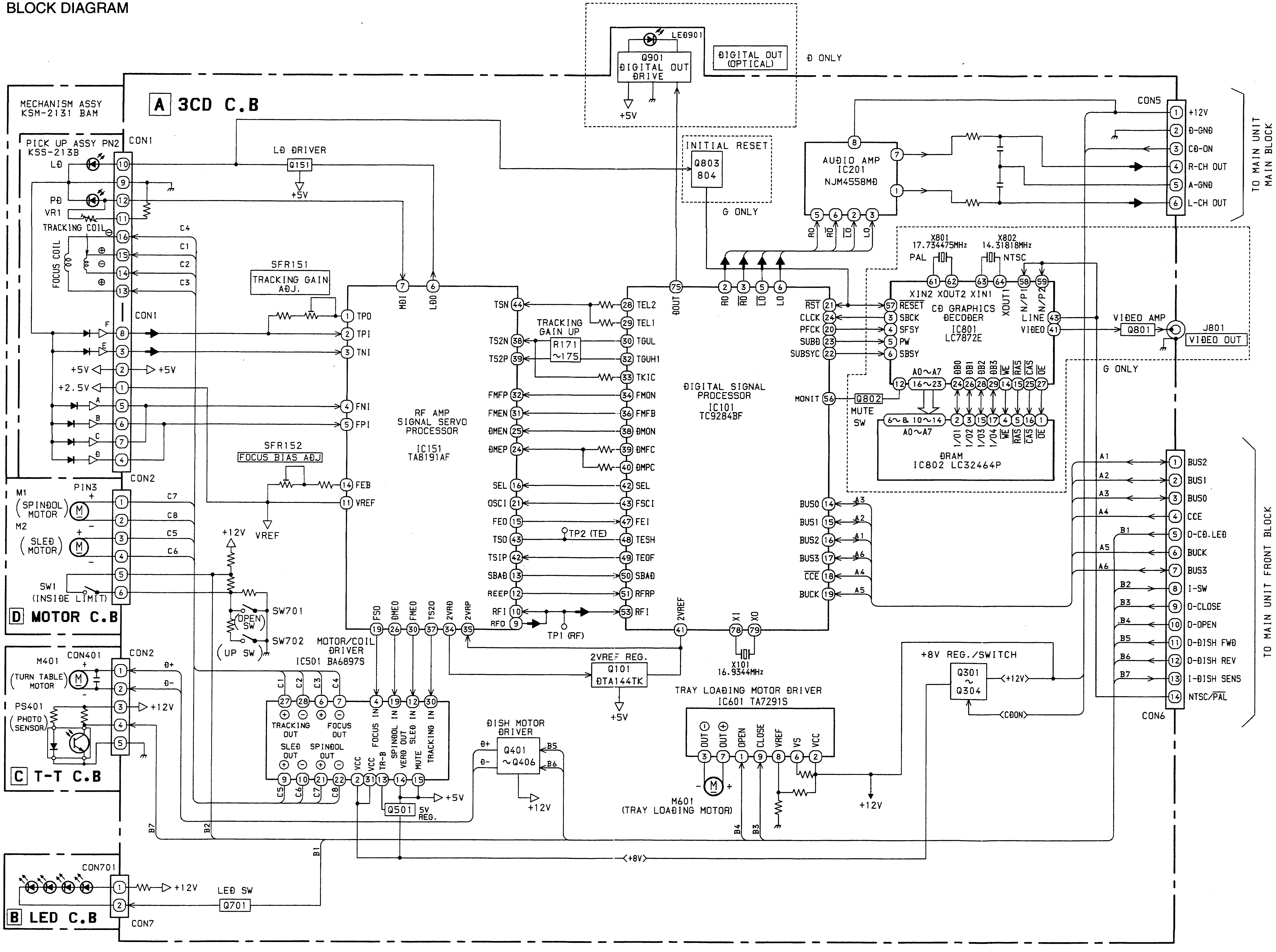
■ CD MECHANISM EXPLODED VIEW 1／1

See page 114

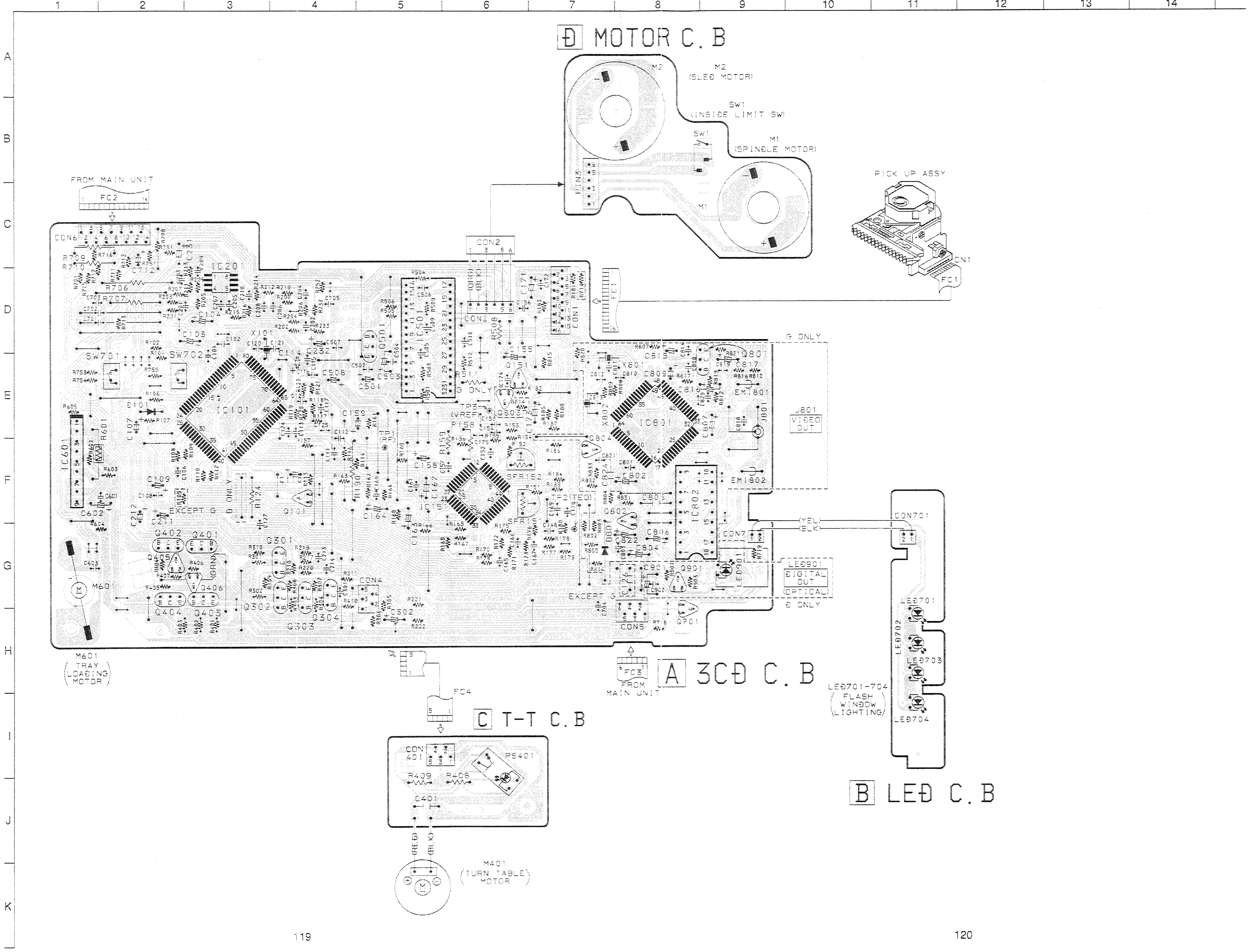
■ CD MECHANISM PARTS LIST 1／1

See page 114

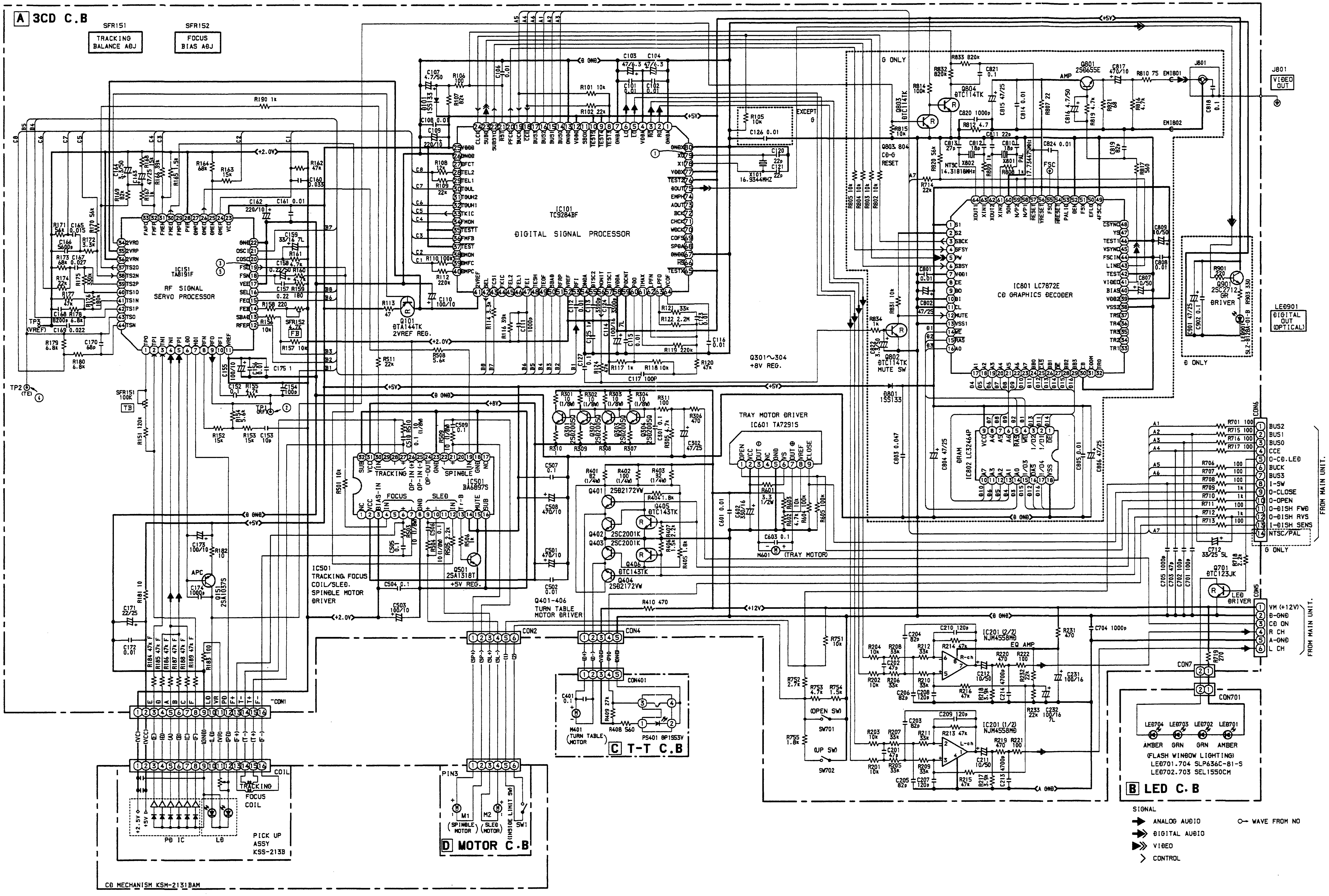
BLOCK DIAGRAM


A 3CD C.B
MECHANISM ASSY KSM-2131 BAM
PICK UP ASSY PN2 KSS-213B
LD
PD
VR1
TRACKING COIL
FOCUS COIL
CON1
CON2
LD DRIVER
Q151
+5V
SFR151
TRACKING GAIN ADJ.
SFR152
FOCUS BIAS ADJ
VREF
+2.5V
RF AMP SIGNAL SERVO PROCESSOR
IC151
TA8191AF
TRACKING GAIN UP
R171 ~175
TP2 (TE)
TP1 (RF)
DIGITAL SIGNAL PROCESSOR
IC101
TC9284BF
X101
16.9344MHz
2VREF REG.
Q101
DTA144TK
MOTOR/COIL DRIVER
IC501 BA6897S
TRACKING OUT
FOCUS OUT
SLED OUT
SPINDOL OUT
Q501 5V REG.
DISH MOTOR DRIVER
Q401 ~Q406
+12V
TRAY LOADING MOTOR DRIVER
IC601 TA7291S
M601 (TRAY LOADING MOTOR)
+8V REG./SWITCH
Q301 ~ Q304
(+12V)
(CDON)
(+8V)
Q901 DIGITAL OUT DRIVE
LED901
DIGITAL OUT (OPTICAL)
D ONLY
INITIAL RESET
Q803 804
G ONLY
AUDIO AMP
IC201
NJM4558MD
CON5
+12V
D-GND
CD-ON
R-CH OUT
A-GND
L-CH OUT
TO MAIN UNIT MAIN BLOCK
X801 17.734475MHz PAL
X802 14.31818MHz NTSC
CD GRAPHICS DECODER
IC801
LC7872E
VIDEO AMP
Q801
J801
VIDEO OUT
Q802
MUTE SW
DRAM
IC802 LC32464P
CON6
BUS2
BUS1
BUS0
CCE
O-CD.LED
BUCK
BUS3
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH REV
I-DISH SENS
NTSC/PAL
TO MAIN UNIT FRONT BLOCK
M1 (SPINDOL MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT)
SW701 (OPEN SW)
SW702 (UP SW)
D MOTOR C.B
CON401
M401 (TURN TABLE MOTOR)
PS401 (PHOTO SENSOR)
C T-T C.B
CON701
LED SW
Q701
CON7
B LED C.B

WIRING

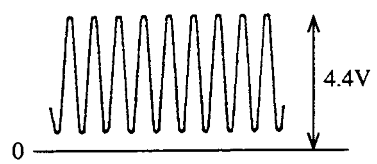

Ð MOTOR C. B
M2 (SLEÐ MOTOR)
SW1 (INSIDE LIMIT SW)
M1 (SPINÐLE MOTOR)
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON2
CON1
IC201
IC101
IC501
IC801
IC802
IC601
IC151
G ONLY
J801 VIDEO OUT
EM1801
EM1802
EXCEPT G
CON701
CON7
(YEL)
(BLK)
LEÐ901 ÐIGITAL OUT (OPTICAL)
Ð ONLY
LEÐ701
LEÐ702
LEÐ703
LEÐ704
LEÐ701-704 (FLASH WINDOW LIGHTING)
B LEÐ C. B
A 3CÐ C. B
FC3 FROM MAIN UNIT
CON5
CON4
FC4
M601 (TRAY LOAÐING MOTOR)
C T-T C. B
CON 401
PS401
R409
R408
C401
(REÐ)
(BLK)
M401 (TURN TABLE MOTOR)
1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K

SCHEMATIC DIAGRAM

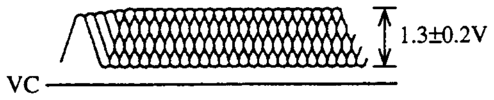

A 3CD C.B
SFR151 TRACKING BALANCE ADJ
SFR152 FOCUS BIAS ADJ
IC151 TA8191F RF SIGNAL SERVO PROCESSOR
IC101 TC9284BF DIGITAL SIGNAL PROCESSOR
Q101 DTA144TK 2VREF REG.
X101 16.9344MHZ
EXCEPT G
G ONLY
Q801 2SB655E AMP
J801
J801 VIDEO OUT
EM1801
EM1802
Q803 DTC114TK
Q804 DTC114TK
Q803, 804 CD-G RESET
NTSC X802 14.31818MHz
PAL X801 17.734475MHz
FSC
IC801 LC7872E CD GRAPHICS DECODER
Q802 DTC114TK MUTE SW
Q901 2SC2712 GR DRIVER
LED901 DIGITAL OUT (OPTICAL)
G ONLY
Q301~304 +8V REG.
D801 1SS133
IC802 LC3264AP DRAM
TRAY MOTOR DRIVER IC601 TA7291S
M601 (TRAY MOTOR)
IC501 BA6897S
TRACKING FOCUS SPINDLE SLED
IC501 TRACKING FOCUS COIL/SLED, SPINDLE MOTOR DRIVER
Q501 2SA1318T +5V REG.
Q151 2SA1037S APC
Q401~406 TURN TABLE MOTOR DRIVER
Q401 2SD2172VW
Q402 2SC2001K
Q403 2SC2001K
Q404 2SD2172VW
Q405 DTC143TK
Q406 DTC143TK
CON1
CON2
CON4
CON5
CON6
CON7
CON401
CON701
BUS2
BUS1
BUS0
CCE
O-CD.LED
BUCK
BUS3
I-SW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
NTSC/PAL
FROM MAIN UNIT.
G ONLY
Q701 DTC123JK LED DRIVER
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
FROM MAIN UNIT.
IC201 (2/2) NJM4558MD EQ AMP
IC201 (1/2) NJM4558MD
R-ch
L-ch
OPEN SW SW701
UP SW SW702
M401 (TURN TABLE) MOTOR
PS401 GP1S53V
C T-T C.B
LED704 LED703 LED702 LED701
AMBER GRN GRN AMBER
(FLASH WINDOW LIGHTING)
LED701.704 SLP636C-81-S
LED702.703 SEL1550CM
B LED C.B
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
VIDEO
CONTROL
WAVE FROM NO
TRACKING FOCUS COIL
PD IC
LD
PICK UP ASSY KSS-213B
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
(INSIDE LIMIT SW) SW1
D MOTOR C.B
CD MECHANISM KSM-2131BAM

WAVE FORM

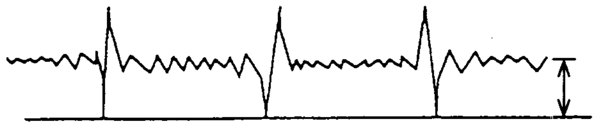
① SYSTEM CLOCK VOLT/DIV: 2V
IC101 Pin ㊾ (XO) TIME/DIV: 0.1μS
f=16.9344MHz



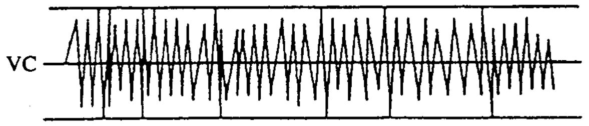
② RF VOLT/DIV: 500mV
TP1 (RF) TIME/DIV: 0.5μS



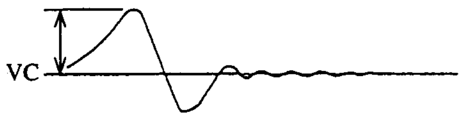
③ Focus VOLT/DIV: 200mV
IC151 Pin ⑲ (FSO) TIME/DIV: 2mS



④ Tracking TIME/DIV: 1mS
TP2 (TE)

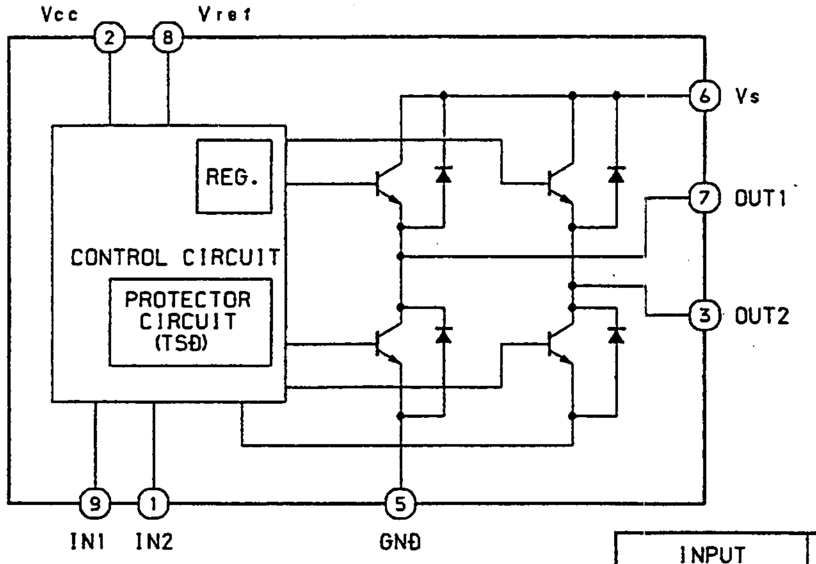


⑤ Focus Search
IC151 Pin ⑲ (FSO)



IC BLOCK DIAGRAM

IC, TA7291



INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

∞ : HI IMPEDANCE
NOTE : INPUT "H" ACTIVE

IC DESCRIPTION

IC, TC9284BF

Pin No.	Pin name	I/O	Description
1	GNDA	—	D/A converter R-channel analog GND.
2	RO	O	R-channel data positive output.
3	$\overline{\text{RO}}$	O	R-channel data inverted output.
4	VDA	—	D/A converter power supply.
5	$\overline{\text{LO}}$	O	L-channel data inverted output.
6	LO	O	L-channel data positive output.
7	GNDA	—	D/A converter L-channel analog GND.
8~10	$\overline{\text{TEST3}}$~$\overline{\text{TEST5}}$	I	TEST pin. Normally "H" or open.
11	SBOK	O	Sub code Q data CRCC judgment result output. Judgment result OK: H
12	VDDD	—	Digital power supply. (+5 V)
13	GNDD	—	Digital GND.
14~17	BUS0~BUS3	I/O	μprocessor interface, data input/output.
18	CCE	I	μprocessor interface, chip enable signal input. When "L" : BUS 3~0 are active
19	BUCK	I	μprocessor interface, clock input.
20	PFCK	O	PB frame sync output.
21	$\overline{\text{RST}}$	I	Reset signal input. "L" at reset.
22	SUBSYC	O	Sub code block sync output. When sub code is detected,"H" at S1 position.
23	SUBD	O	Sub code P~W output.
24	CLCK	I	Sub code P~W data read clock input.
25	VDDD	—	Digital power supply. (+5 V)
26	GNDD	—	Digital GND.
27	DFCT	O	Defect detection signal output. When defect is detected: "VREF", normally "HiZ".
28	TEL2	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
29	TEL1	O	Tracking gain adjustment analog switch output. "VREF" , or "HiZ".
30	TGUL	O	Analog switch output for tracking servo gain up. Polarity in gain-up mode and normal mode can be selected by command.
31	TGUH2	O	Analog switch output for tracking servo gain up. "HiZ" for gain-up, normally "VREF". TGUH1 during normal playback. TGUH2: not used
32	TUGH1	O	
33	TKIC	O	Tracking actuator kick signal output. NKICx and CKICx are used for kick during tracking gain adjustment. "VREF" for outermost track."O" for moving toward inner track. Normally "HiZ".
34	FMON	O	Analog switch output to turn ON/OFF the feed servo. "HiZ" to turn ON servo. "VREF" to turn OFF servo.
35	$\overline{\text{TEST1}}$	I	TEST pin. Normally "H" or open.
36	FMFB	O	Feed motor FWD/BWD direction control signal output."2VREF" for outmost track. "O" for moving toward inner track. Normally "HiZ".
37	$\overline{\text{TEST}}$	I	TEST pin. Normally "H" or open.
38	DMON	O	Analog switch output to select gain of the disc motor drive circuit. "HiZ" for CLV servo OFF, "HiZ" or "VREF" can be selected by command.

<table>
<tr><th>Pin No.</th><th>Pin name</th><th>I/O</th><th>Description</th></tr>
<tr><td>39</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo AFC signal output.
<table>
<tr><th>Operation</th><th>Command</th><th>DMFC output</th></tr>
<tr><td>Motor acceleration</td><td>DMFK</td><td>"2VREF"</td></tr>
<tr><td>CLV servo ON</td><td>DMSV</td><td>AFC signal (PWM)</td></tr>
<tr><td>Motor brake</td><td>DMBK</td><td>"L"</td></tr>
<tr><td>CLV servo OFF</td><td>DMOFF</td><td>"VREF"</td></tr>
</table></td></tr>
<tr><td>40</td><td>DMPC</td><td>O</td><td>Disc motor CLV servo APC signal output.</td></tr>
<tr><td>41</td><td>2VREF</td><td>—</td><td>Analog power supply. (twice the "VREF" voltage)</td></tr>
<tr><td>42</td><td>SEL</td><td>O</td><td>Servo mode select output. It turns ON/OFF the laser diode (LD) and focus servo.
<table>
<tr><th>SEL output</th><th>LD</th><th>Focus servo</th><th>Operating mode</th></tr>
<tr><td>"L"</td><td>OFF</td><td>OFF</td><td>LD OFF</td></tr>
<tr><td>"HiZ"</td><td>ON</td><td>OFF</td><td>Focus search</td></tr>
<tr><td>"H"</td><td>ON</td><td>ON</td><td>Focus ON (normal play)</td></tr>
</table></td></tr>
<tr><td>43</td><td>FCSI</td><td>O</td><td>Focus actuator drive signal output during focus search mode. "VDDA" to move the lens far from disc. "L" to move the lens closer to disc. Normally "HiZ".</td></tr>
<tr><td>44</td><td>FKIC</td><td>O</td><td>Focus actuator drive signal output during focus adjustment mode.ÅgVDDAÅhto move the lens far from disc. "L" to move the lens closer to disc. Normally "HiZ".</td></tr>
<tr><td>45, 46</td><td>FEL1, FEL2</td><td>O</td><td>Focus gain adjustment analog switch output. "VREF" or "HiZ".</td></tr>
<tr><td>47</td><td>FEI</td><td>I</td><td>Focus error signal input.</td></tr>
<tr><td>48</td><td>TESH</td><td>I</td><td>Analog switch input to track error signal sample-and-hold.</td></tr>
<tr><td>49</td><td>TEOF</td><td>O</td><td>Focus gain adjustment analog switch output."VREF" when tracking servo off.</td></tr>
<tr><td>50</td><td>SBAD</td><td>I</td><td>Sub beam added signal input.</td></tr>
<tr><td>51</td><td>RFRP</td><td>I</td><td>RF ripple signal input.</td></tr>
<tr><td>52</td><td>VREF</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>53</td><td>RFI</td><td>I</td><td>RF signal input.</td></tr>
<tr><td>54</td><td>GNDA</td><td>—</td><td>Analog GND.</td></tr>
<tr><td>55</td><td>DTSC2</td><td>O</td><td>Data slice control EFM signal inverted output.</td></tr>
<tr><td>56</td><td>MONI T</td><td>O</td><td>Internal signal monitored output. EFMO, PLCK or LOCK signals can be selected by command. Can be muted. (Not used)</td></tr>
<tr><td>57</td><td>DTSC 1</td><td>O</td><td>Data slice control EFM signal positive polarity output.</td></tr>
<tr><td>58</td><td>VDDA</td><td>—</td><td>Analog power supply.</td></tr>
<tr><td>59</td><td>PDCNT</td><td>I</td><td>PDO output control signal input. "L" to fix to "HiZ" forcibly. "H" : normal output.</td></tr>
<tr><td>60</td><td>PDO</td><td>O</td><td>Phase error signal between EFM and PLCK signals is output.</td></tr>
<tr><td>61</td><td>TMAX</td><td>O</td><td>TMAX detected result output.
<table>
<tr><th>TMAX detected result</th><th>TMAX output</th></tr>
<tr><td>Longer than specified cycle</td><td>"L"</td></tr>
<tr><td>Shorter than specified cycle</td><td>"VREF"</td></tr>
<tr><td>Within specified cycle</td><td>"HiZ"</td></tr>
</table></td></tr>
<tr><td>62</td><td>LPFN</td><td>I</td><td>Low-pass filter amplifier inverted input.</td></tr>
</table>

Pin No.	Pin name	I/O	Description
63	LPFO	O	Low-pass filter amplifier output.
64	VCOF	O	VCO filter output.
65	TESTX	I	TEST pin. Normally "H" or "L" .(Connected to +5 V)
66	$\overline{\text{HS}}$	O	Double speed mode output. "H" : normal speed. "L" : double speed
67	GNDD	—	Digital GND.
68	SPDA	O	Processor status signal output.
69	COFS	O	Correction circuit frame clock (7.35 kHz) output.
70	WDCK	O	Word clock (88.2 kHz) output. SUBQ, BUF0V or 1PF can be selected by the µprocessor command. (Not used)
71	CHCK	O	Channel clock (44.1 kHz) output. "L"for L-channel. "H" for R-channel.
72	BCK	O	Bit clock (1.4112 MHz) output.
73	AOUT	O	Audio data output. (Not used)
74	EMPH	O	Emphasis ON/OFF select signal. "H" : emphasis ON. "L" for emphasis OFF
75	DOUT	O	DIGITAL SIGNAL output.
76	$\overline{\text{TEST2}}$	I	TEST pin. Normally "H".
77	VDDX	—	Crystal oscillator circuit power supply.
78	XI	I	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
79	XO	O	External crystal oscillator is connected. (Crystal oscillator frequency 16.9344 MHz)
80	GNDX	—	Crystal oscillator GND.

IC, TA8191F

Pin No.	Pin Name	I/O	Description
1	TPO	O	Sub beam I-V amplifier (TA Amp) output terminal.
2	TPI	I	Sub beam I-V amplifier (TA Amp) input terminal.
3	TNI	I	Sub beam I-V amplifier (TA Amp) input terminal.
4	FNI	I	Main beam I-V amplifier (FN Amp) input terminal.
5	FPI	I	Main beam I-V amplifier (FP Amp) input terminal.
6	LDO	O	Laser diode amplifier (LD Amp) output terminal.
7	MDI	I	Monitor photo diode amplifier (MD Amp) input terminal.
8	RFN	I	RF amplifier reversed phase input terminal.
9	RFO	O	RF amplifier output terminal.
10	RFI	I	RF ripple signal generator circuit input terminal.
11	VREF	O	Reference voltage output terminal (+2.1 V).
12	RFRP	O	RF ripple signal output terminal.
13	SBAD	O	Scar detection signal output terminal.
14	FEB	I	Focus error balance adjustment input terminal.
15	FEO	O	Focus error amplifier (FE Amp) output terminal.
16	SEL	I	Analog switch control signal input terminal.
17	VEE	—	Power supply terminal. (TA8190F; -5 V, TA8191F; GND)
18	FSN	I	Focus output amplifier (FS Amp) reversed phase input terminal.
19	FSO	O	Focus output amplifier (FS Amp) output terminal.
20	COSC	O	External capacitor to generate focus search signal is connected to this terminal.
21	OSCI	I	External input to control the built-in power supply to generate focus search signal is connected to this terminal.
22	GND	—	GND.
23	VCC	I	Power supply terminal (+5 V).
24	DMEP	I	Disc motor amplifier (DM Amp) positive phase input terminal.
25	DMEN	I	Disc motor amplifier (DM Amp) reversed phase input terminal.
26	DMEO	O	Disc motor amplifier (DM Amp) output terminal.
27	DMPO	O	Disc motor drive amplifier (DMP Amp) output terminal. (Not used).
28	PVR	I	Drive amplifier reference voltage input terminal.
29	FMPO	O	Feed motor drive amplifier (FMP Amp) output terminal. (Not used).
30	FMEO	O	Feed motor amplifier (FM Amp) output terminal.
31	FMEN	I	Feed motor amplifier (FM Amp) reversed phase input terminal.
32	FMEP	O	Feed motor amplifier (FM Amp) positive phase input terminal.
33	FAPO	O	Focus actuator drive amplifier (FAP Amp) output terminal. (Not used).
34	2VRO	I	2 V REF amplifier (2 V REF Amp) output terminal.
35	2VRP	I	2 V REF amplifier (2 V REF Amp) positive phase input terminal.
36	2VRN	I	2 V REF amplifier (2 V REF Amp) reversed phase input terminal.
37	TS2O	O	Tracking servo amplifier 2 (TS2 Amp) output terminal.
38	TS2N	I	Tracking servo amplifier 2 (TS2 Amp) reversed phase input terminal.
39	TS2P	I	Tracking servo amplifier 2 (TS2 Amp) positive phase input terminal.
40	TS1O	O	Tracking servo amplifier 1 (TS1 Amp) output terminal.
41	TS1N	I	Tracking servo amplifier 1 (TS1 Amp) reversed phase input terminal.
42	TS1P	I	Tracking servo amplifier 1 (TS1 Amp) positive phase input terminal.
43	TSO	O	Tracking output amplifier (TS Amp) output terminal.
44	TSN	I	Tracking output amplifier (TS Amp) reversed phase input terminal.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.

- Press the function button. (except CD function button)
- Press the power switch button.
- Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

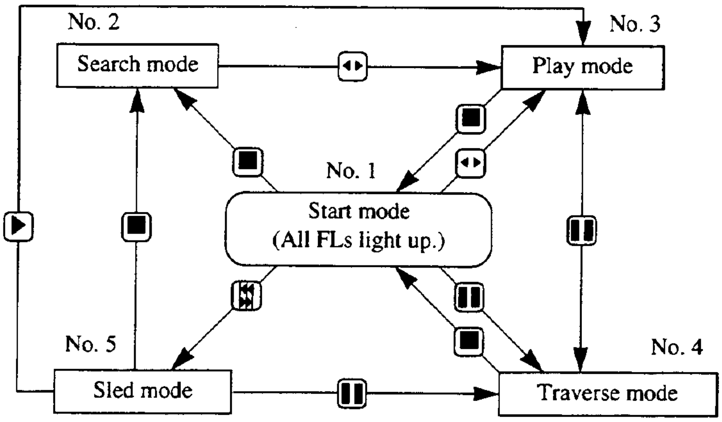
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. (CD block power is ON.) • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD 1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check FOK/FZC
Traverse mode No.4	▮▮ key	CD 1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) adjustment
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ▮▮ status is active. If they are pressed, playback will not be possible after the ▮▮ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ▮▮ status, press the ■ key and return to the start mode (No.1).

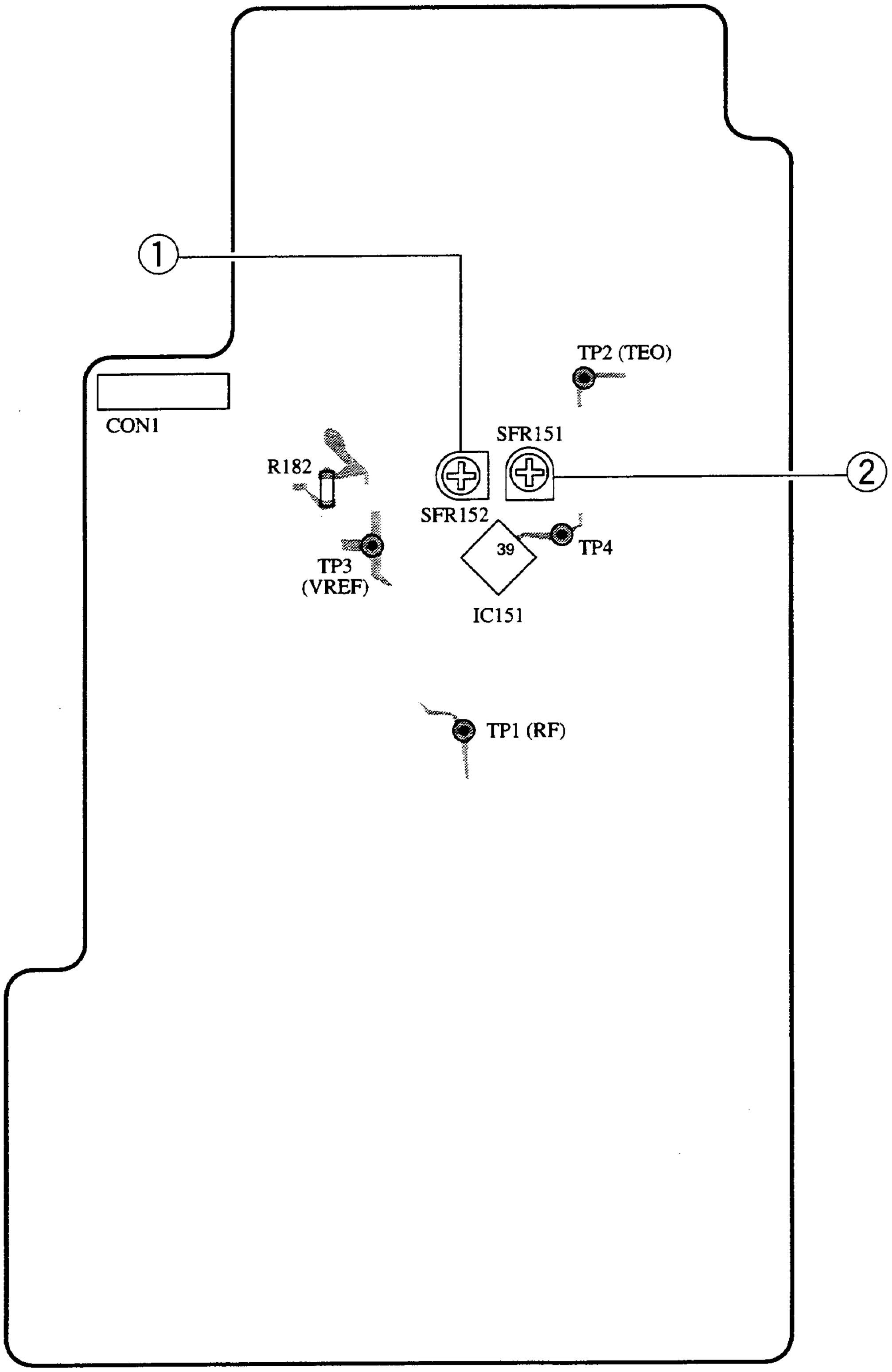
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

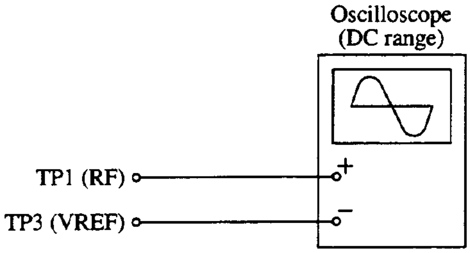
A 3CD C.B (PATTERN SIDE)


①
②
TP2 (TEO)
CON1
SFR151
R182
SFR152
39
TP4
TP3
(VREF)
IC151
TP1 (RF)

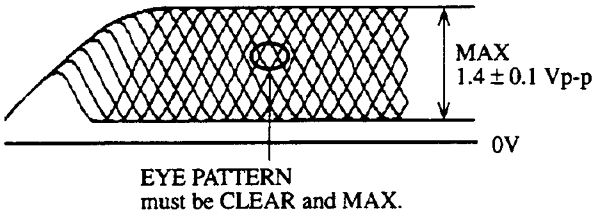
Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. Focus Bias Adjustment

Make the focus bias adjustment when replacing and repairing the optical block.

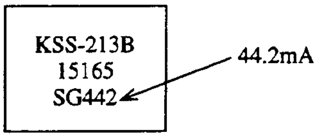

Oscilloscope
(DC range)
TP1 (RF)
TP3 (VREF)
+
−

1) Connect an oscilloscope to test points TP1 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Adjust SFR152 so that RF signal of the test point TP2 (RF) is MAX and CLEARREST.


MAX
1.4 ± 0.1 Vp-p
0V
EYE PATTERN
must be CLEAR and MAX.

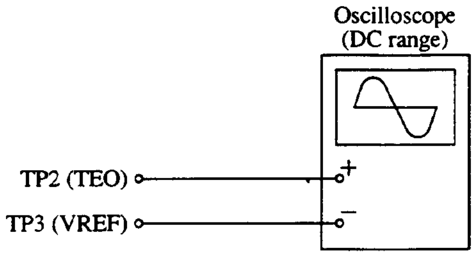
VOLT/DIV: 0.5V
TIME/DIV: 0.5µS

Note : The current of the laser signal can be checked with the voltages on both sides of R182 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

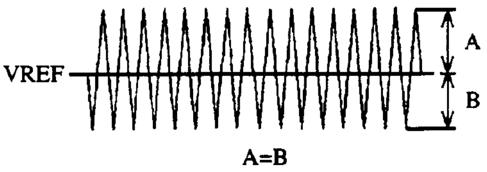

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R182}}{10\Omega}$$

2. Tracking Balance Adjustment


Oscilloscope
(DC range)
TP2 (TEO)
TP3 (VREF)
+
−

1) Short circuit between TP3 (VREF) and TP4.
2) Connect an oscilloscope to test points TP2 (TEO) and TP3 (VREF).
3) Turn on the power switch.
4) Insert test disc TCD-782 (YEDS-18) and press the PLAY (▶) button.
5) Adjust SFR151 so that the waveform on the oscilloscope is vertically symmetrical as shown in the figure below.
6) After the adjustment is completed, remove the connected lead wires from the test point TP3 (VREF) and TP4.



VOLT/DIV: 20mV
TIME/DIV: 2mS

4ZG-1Z

ELECTRICAL MAIN PARTS LIST

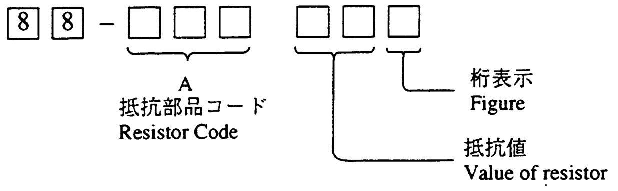
DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
IC			
	87-A20-165-010		C-IC,LA9230M
	87-A20-164-010		C-IC,LC78630E-T
	87-017-888-089		IC,NJM4558MD
	87-070-305-019		IC,BA6897S
	87-001-982-019		IC,TA7291S
TRANSISTOR			
	87-026-463-089		TR, 2SA933S (RS)
	89-406-555-089		TR,2SD655E
	89-320-011-089		TR,2SC2001K
	87-026-223-089		C-TR,DTC143TK
	89-113-187-089		TR,2SA1318TU
	87-026-470-089		TR,HN1C03 F B
	87-026-608-089		C-TR,DTC 123 JK
	89-327-125-089		C-TR,2SC2712GR<D>
DIODE			
	87-020-465-089		DIODE,1SS133
3CD C.B			
C11	87-016-081-089		C-CAP,S 0.1-16 RK
C12	87-012-157-089		C-CAP,S 330P-50 CH
C13	87-016-369-089		C-CAP,S 0.033-25 B K
C14	87-016-081-089		C-CAP,S 0.1-16 RK
C15	87-010-596-089		C-CAP,S 0.047-16 RK
C16	87-010-956-089		C-CAP,S 0.068-25 B
C17	87-010-182-089		C-CAP,S 2200P-50 B
C18	87-016-369-089		C-CAP,S 0.033-25 B K
C19	87-010-213-089		C-CAP,S 0.015-25 B
C20	87-010-178-089		C-CAP,S 1000P-50 B
C21	87-012-393-089		C-CAP,S 0.22-16,R,K
C22	87-016-083-089		C-CAP,S 0.15-16 RK
C23	87-010-197-089		C-CAP,S 0.01-25 B
C24	87-010-186-089		C-CAP,S 4700P-50 B
C25	87-015-694-089		CAP E 0.47-50-7L
C26	87-010-322-089		C-CAP,S 100P-50 CH
C27	87-015-686-089		CAP,E 22-25 7L
C28	87-015-697-089		CAP,E 3.3-50 7L
C29	87-010-184-089		C-CAP,S 3300P-50 B
C30	87-010-146-089		C-CAP,S 2P-50 CH
C31	87-010-186-089		C-CAP,S 4700P-50 B
C32	87-010-148-089		C-CAP,S 4P-50 CH
C33	87-016-081-089		C-CAP,S 0.1-16 RK
C35	87-010-196-089		C-CAP,S 0.1-25 F
C37	87-010-405-089		CAP,E 10-50 SME
C38	87-010-263-089		CAP,E 100-10 SME
C39	87-010-197-089		C-CAP,S 0.01-25 B
C40	87-010-401-089		CAP,E 1-50 SME
C41	87-016-463-089		C-CAP,S 0.33-16 B
C42	87-010-263-089		CAP,E 100-10 SME
C43	87-018-134-089		CAP,TC-U 0.01-16 Y
C44	87-010-263-089		CAP,E 100-10 SME
C46	87-010-196-089		C-CAP,S 0.1-25 F
C47	87-015-684-010		CAP,E 47-16 7L
C48	87-010-196-089		C-CAP,S 0.1-25 F
C50	87-010-197-089		C-CAP,S 0.01-25 B
C51	87-010-263-089		CAP,E 100-10 SME
C101	87-016-081-089		C-CAP,S 0.1-16 RK
C102	87-016-081-089		C-CAP,S 0.1-16 RK
C103	87-012-149-089		C-CAP, S 30P-50 CH
C105	87-010-196-089		C-CAP,S 0.1-25 F
C106	87-010-196-089		C-CAP,S 0.1-25 F
C108	87-010-154-089		C-CAP,S 10P-50 CH
C109	87-010-154-089		C-CAP,S 10P-50 CH
C111	87-010-196-089		C-CAP,S 0.1-25 F
C112	87-010-404-089		CAP,E 4.7-50 SME
C113	87-010-196-089		C-CAP,S 0.1-25 F
C114	87-010-263-089		CAP,E 100-10 SME
C201	87-010-318-089		C-CAP,S 47P-50 CH
C202	87-010-318-089		C-CAP,S 47P-50 CH
C203	87-010-321-089		C-CAP,S 82P-50 CH
C204	87-010-321-089		C-CAP,S 82P-50 CH
C205	87-010-321-089		C-CAP,S 82P-50 CH
C206	87-010-321-089		C-CAP,S 82P-50 CH
C207	87-010-318-089		C-CAP,S 47P-50 CH
C208	87-010-318-089		C-CAP,S 47P-50 CH
C209	87-010-318-089		C-CAP,S 47P-50 CH
C210	87-010-318-089		C-CAP,S 47P-50 CH
C211	87-010-403-089		CAP,E 3.3-50 SME
C212	87-010-403-089		CAP,E 3.3-50 SME
C213	87-010-186-089		C-CAP,S 4700P-50 B
C214	87-010-186-089		C-CAP,S 4700P-50 B
C215	87-010-555-049		CAP,E 100-10 GAS
C216	87-010-384-089		CAP,E 100-25 SME
C301	87-010-196-089		C-CAP,S 0.1-25 F
C302	87-010-260-089		CAP,E 47-25 SME
C501	87-010-221-089		CAP,E 470-10 11L
C502	87-010-197-089		C-CAP,S 0.01-25 B
C504	87-010-196-089		C-CAP,S 0.1-25 F
C505	87-010-196-089		C-CAP,S 0.1-25 F
C506	87-010-196-089		C-CAP,S 0.1-25 F
C507	87-010-196-089		C-CAP,S 0.1-25 F
C509	87-010-196-089		C-CAP,S 0.1-25 F
C510	87-010-196-089		C-CAP,S 0.1-25 F
C601	87-010-197-089		C-CAP,S 0.01-25 B
C602	87-010-381-089		CAP,E 330-16 SME
C603	87-010-196-089		C-CAP,S 0.1-25 F
C701	87-010-322-089		C-CAP,S 100P-50 CH
C702	87-010-322-089		C-CAP,S 100P-50 CH
C703	87-010-322-089		C-CAP,S 100P-50 CH
C704	87-010-322-089		C-CAP,S 100P-50 CH
C705	87-018-131-089		CAP,TC-U 1000P-50 B
C901	87-010-260-089		CAP,E 47-25 SME<D>
C902	87-010-196-089		C-CAP,S 0.1-25 F<D>
FC1	85-NFT-611-119		FF-CABLE,16P-1.0
FC4	84-ZG1-614-219		CABLE,FFC 5P-1.25
FC5	84-ZG1-630-019		CABLE FFC 6P-1.25
L11	87-003-102-089		COIL,10UH
LED901	87-A40-123-019		LED,SLZ-8128A-01-B<D>
M601	87-045-383-019		MOT,M9I T2
R102	87-022-345-089		C-RES,S 1.2K-1/10W F
SW701	87-036-109-019		SW,PUSH SPPB 61
SW702	87-036-109-019		SW,PUSH SPPB 61
X101	87-030-402-089		VIB,XTAL 16.9344 MHZ
LED C.B			
LED701	87-070-200-089		LED,SLP636C-81-S-T1
LED702	87-017-350-080		LED,SEL1550CM
LED703	87-017-350-080		LED,SEL1550CM
LED704	87-070-200-089		LED,SLP636C-81-S-T1

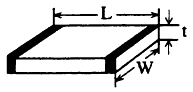
REF. NO.	PART NO.	カンリ NO.	DESCRIPTION
T-T C.B			
C401	87-018-214-089		CAP TC U 0.1-50 F
M401	87-045-364-019		MOTOR,(BCH3B14)
PS401	87-026-573-019		P-SNSR,GP1S53V
DRIVE C.B			
M1	87-045-358-019		MOT,RF-310TA 43
M2	87-045-356-019		MOT,RF-310TA 30
SW1	87-A90-042-019		SW,LEAF MSW 17310 MVPO

○ チップ抵抗部品コード／CHIP RESISTOR PART CODE

チップ抵抗部品コードの成り立ち
Chip Resistor Part Coding


8 8 - □□□ □□□
A
抵抗部品コード
Resistor Code
桁表示
Figure
抵抗値
Value of resistor

チップ抵抗
Chip resistor

容量 Wattage	種類 Type	許容誤差 Tolerance	記号 Symbol	寸法／Dimensions (mm)				抵抗コード :A Resistor Code: A
				外形／Form	L	W	t	
1／16W	1608	±5%	CJ		1.6	0.8	0.45	108
1／10W	2125	±5%	CJ		2	1.25	0.45	118
1／8W	3216	±5%	CJ		3.2	1.6	0.55	128

Refer to the following pages for the 4ZG-1 and the common sections.

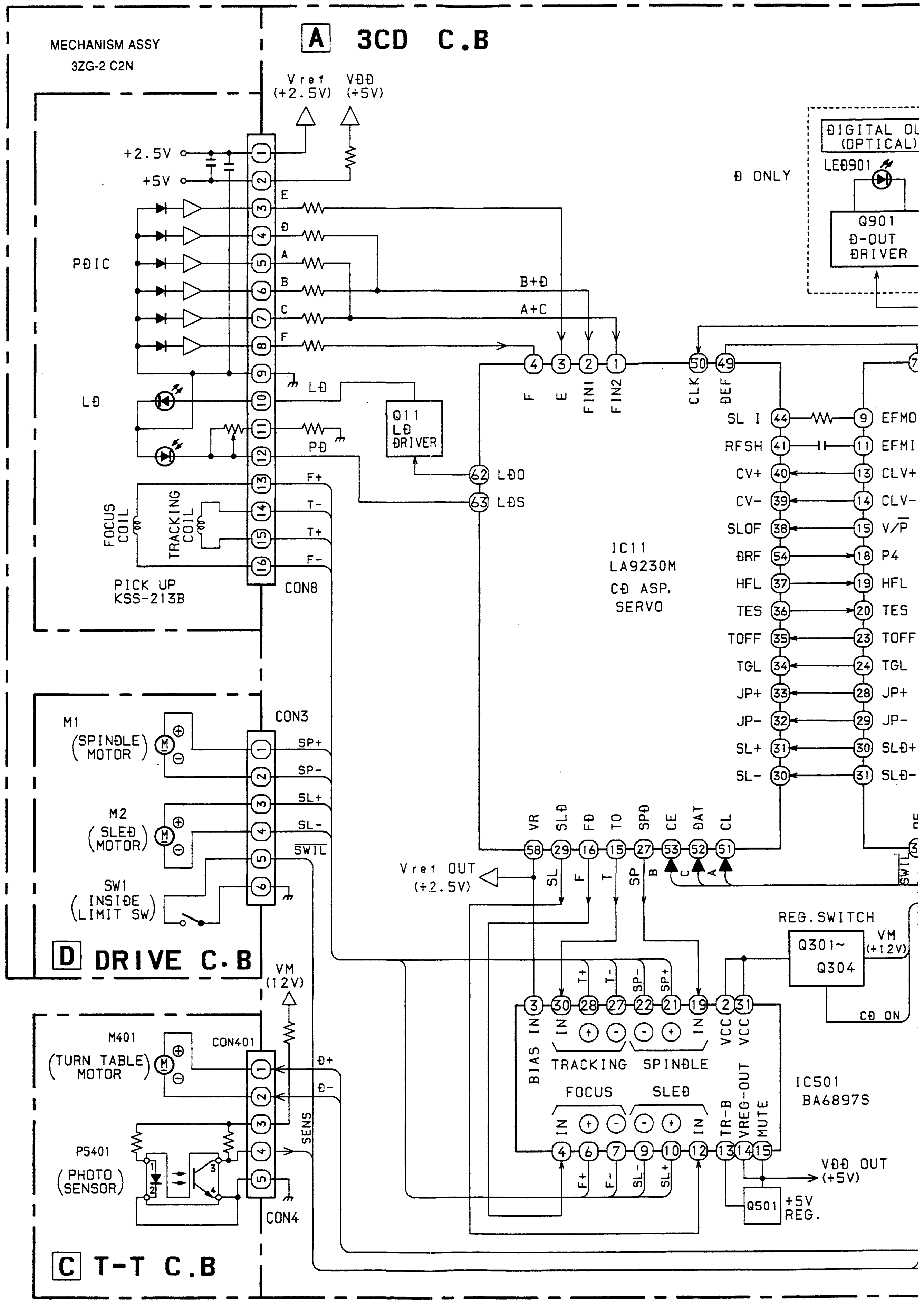
- ■ MECHANICAL EXPLODED VIEW 1／1

  See page 95

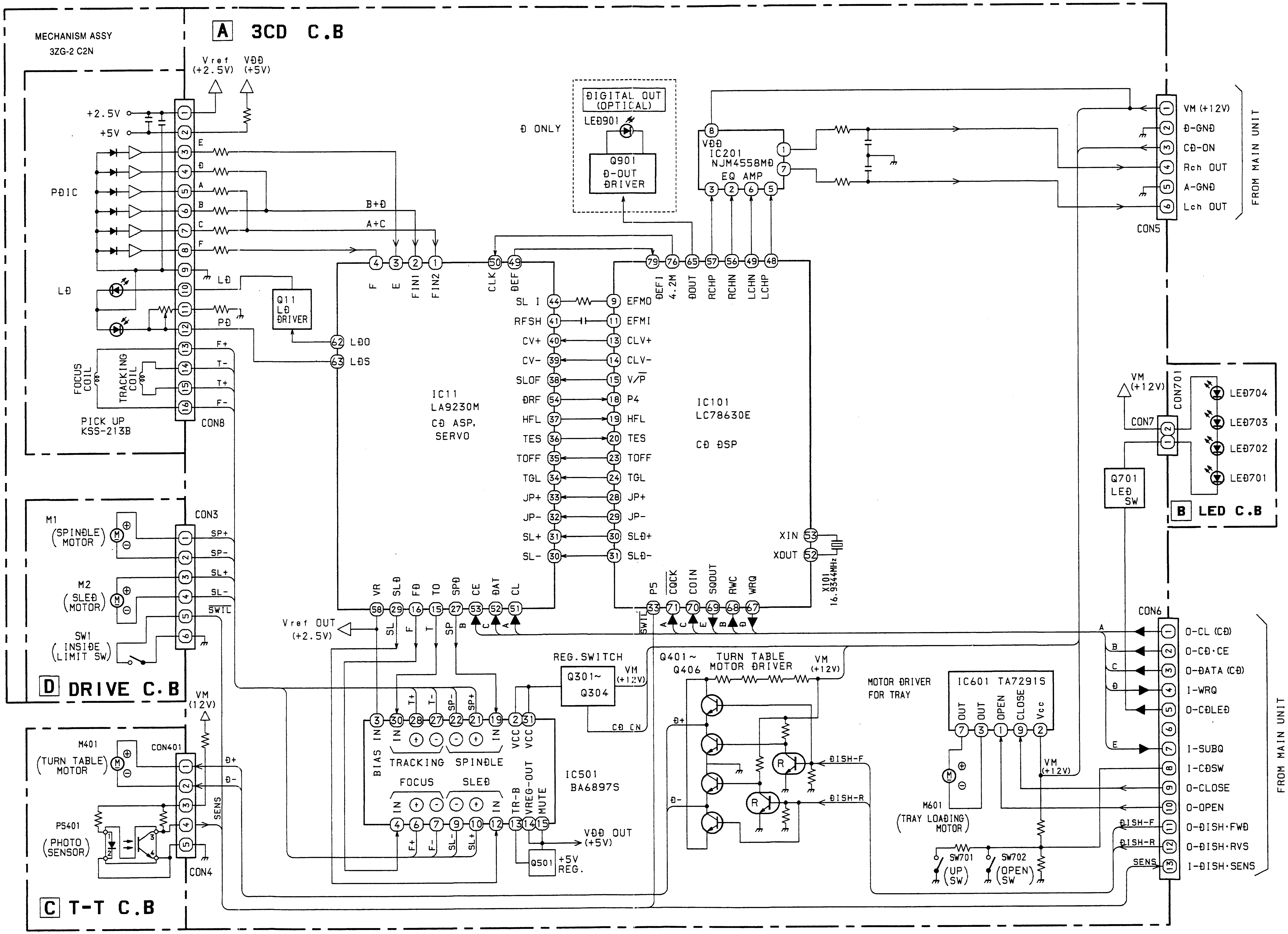
- ■ MECHANICAL PARTS LIST 1／1

  See page 96

BLOCK DIAGRAM

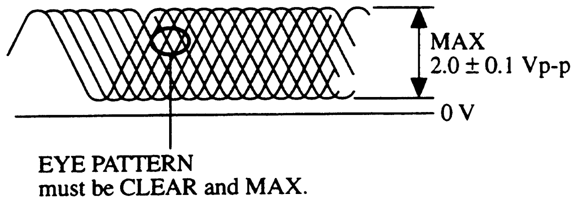

A 3CD C.B
MECHANISM ASSY
3ZG-2 C2N
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
PDIC
LD
FOCUS COIL
TRACKING COIL
PICK UP
KSS-213B
CON8
E
D
A
B
C
F
LD
PD
F+
T-
T+
F-
Q11
LD DRIVER
B+D
A+C
F
E
FIN1
FIN2
CLK
DEF
LDD
LDS
IC11
LA9230M
CD ASP,
SERVO
SL I
RFSH
CV+
CV-
SLOF
DRF
HFL
TES
TOFF
TGL
JP+
JP-
SL+
SL-
EFMO
EFMI
CLV+
CLV-
V/P
P4
HFL
TES
TOFF
TGL
JP+
JP-
SLD+
SLD-
VR
SLD
FD
TO
SPD
CE
DAT
CL
SL
F
T
SP
B
C
A
Vref OUT
(+2.5V)
DIGITAL OU
(OPTICAL)
LED901
D ONLY
Q901
D-OUT
DRIVER
REG.SWITCH
Q301~
Q304
VM
(+12V)
CD ON
M1
(SPINDLE MOTOR)
M2
(SLED MOTOR)
SW1
(INSIDE LIMIT SW)
CON3
SP+
SP-
SL+
SL-
SWIL
D DRIVE C.B
VM
(12V)
M401
(TURN TABLE MOTOR)
CON401
PS401
(PHOTO SENSOR)
D+
D-
SENS
CON4
C T-T C.B
BIAS IN
IN
TRACKING
SPINDLE
FOCUS
SLED
VCC
TR-B
VREG-OUT
MUTE
IC501
BA6897S
VDD OUT
(+5V)
Q501
+5V
REG.
T+
T-
SP-
SP+
F+
F-
SL-
SL+

BLOCK DIAGRAM

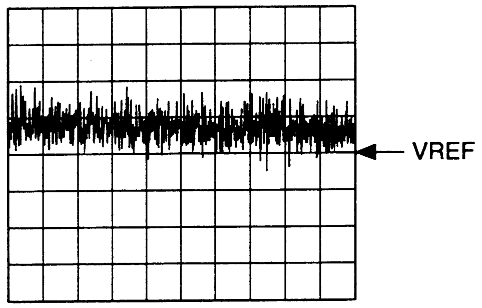

MECHANISM ASSY
3ZG-2 C2N
A 3CD C.B
Vref (+2.5V)
VDD (+5V)
+2.5V
+5V
PDIC
LD
PD
FOCUS COIL
TRACKING COIL
PICK UP KSS-213B
CON8
E
D
A
B
C
F
F+
T-
T+
F-
B+D
A+C
Q11 LD DRIVER
LDO
LDS
IC11 LA9230M
CD ASP, SERVO
F
E
FIN1
FIN2
CLK
DEF
SL I
RFSH
CV+
CV-
SLOF
DRF
HFL
TES
TOFF
TGL
JP+
JP-
SL+
SL-
EFMO
EFMI
CLV+
CLV-
V/P
P4
HFL
TES
TOFF
TGL
JP+
JP-
SLD+
SLD-
IC101 LC78630E
CD DSP
DEFI
4.2M
DOUT
RCHP
RCHN
LCHN
LCHP
XIN
XOUT
X101 16.9344MHz
DIGITAL OUT (OPTICAL)
D ONLY
LED901
Q901 D-OUT DRIVER
VDD
IC201 NJM4558MD
EQ AMP
VM (+12V)
D-GND
CD-ON
Rch OUT
A-GND
Lch OUT
CON5
FROM MAIN UNIT
VR
SLD
FD
TO
SPD
CE
DAT
CL
P5
CQCK
COIN
SQOUT
RWC
WRQ
SWIL
Vref OUT (+2.5V)
SL
F
T
SP
REG. SWITCH
Q301~Q304
VM (+12V)
CD ON
Q401~Q406
TURN TABLE MOTOR DRIVER
VM (+12V)
D+
D-
DISH-F
DISH-R
BIAS IN
IN
TRACKING
SPINDLE
FOCUS
SLED
VCC
TR-B
VREG-OUT
MUTE
IC501 BA6897S
VDD OUT (+5V)
Q501
+5V REG.
MOTOR DRIVER FOR TRAY
IC601 TA7291S
OUT
OUT
OPEN
CLOSE
Vcc
M601 (TRAY LOADING MOTOR)
VM (+12V)
SW701 (UP SW)
SW702 (OPEN SW)
VM (+12V)
CON701
CON7
LED704
LED703
LED702
LED701
Q701 LED SW
B LED C.B
CON6
O-CL (CD)
O-CD·CE
O-DATA (CD)
I-WRQ
O-CDLED
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH·FWD
O-DISH·RVS
I-DISH·SENS
DISH-F
DISH-R
SENS
FROM MAIN UNIT
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
CON3
SP+
SP-
SL+
SL-
SWIL
D DRIVE C.B
VM (12V)
M401 (TURN TABLE MOTOR)
CON401
PS401 (PHOTO SENSOR)
SENS
CON4
C T-T C.B

WAVE FORM

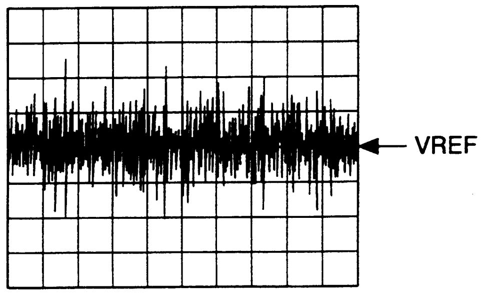
① IC11 Pin ㊶ (RFSM) VOLT/DIV: 0.5V TIME/DIV: 1μS



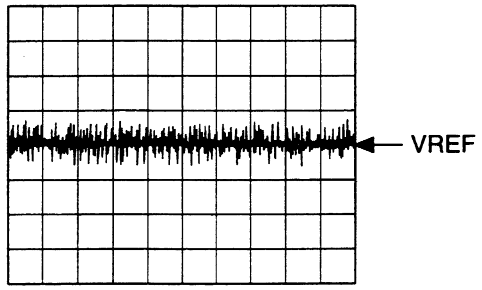
② IC11 Pin ⑯ (FD) VOLT/DIV: 100mV TIME/DIV: 1mS



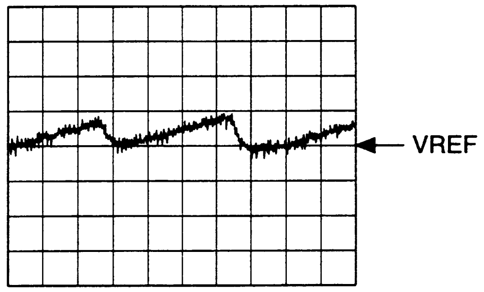
③ IC11 Pin ⑮ (TO) VOLT/DIV: 100mV TIME/DIV: 1mS



④ IC11 Pin ㉗ (SPD) VOLT/DIV: 100mV TIME/DIV: 1mS

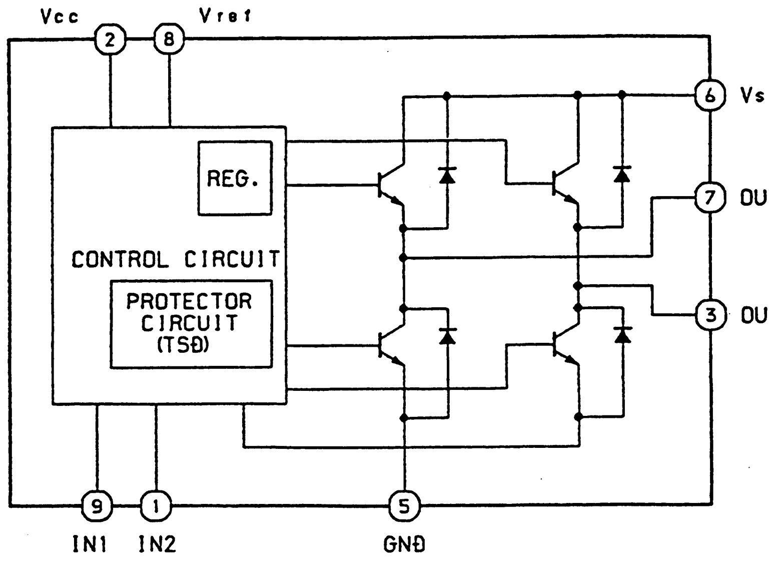


⑤ IC11 Pin ㉙ (SLD) VOLT/DIV: 200mV TIME/DIV: 2S



IC BLOCK DIAGRAM

IC, TA7291

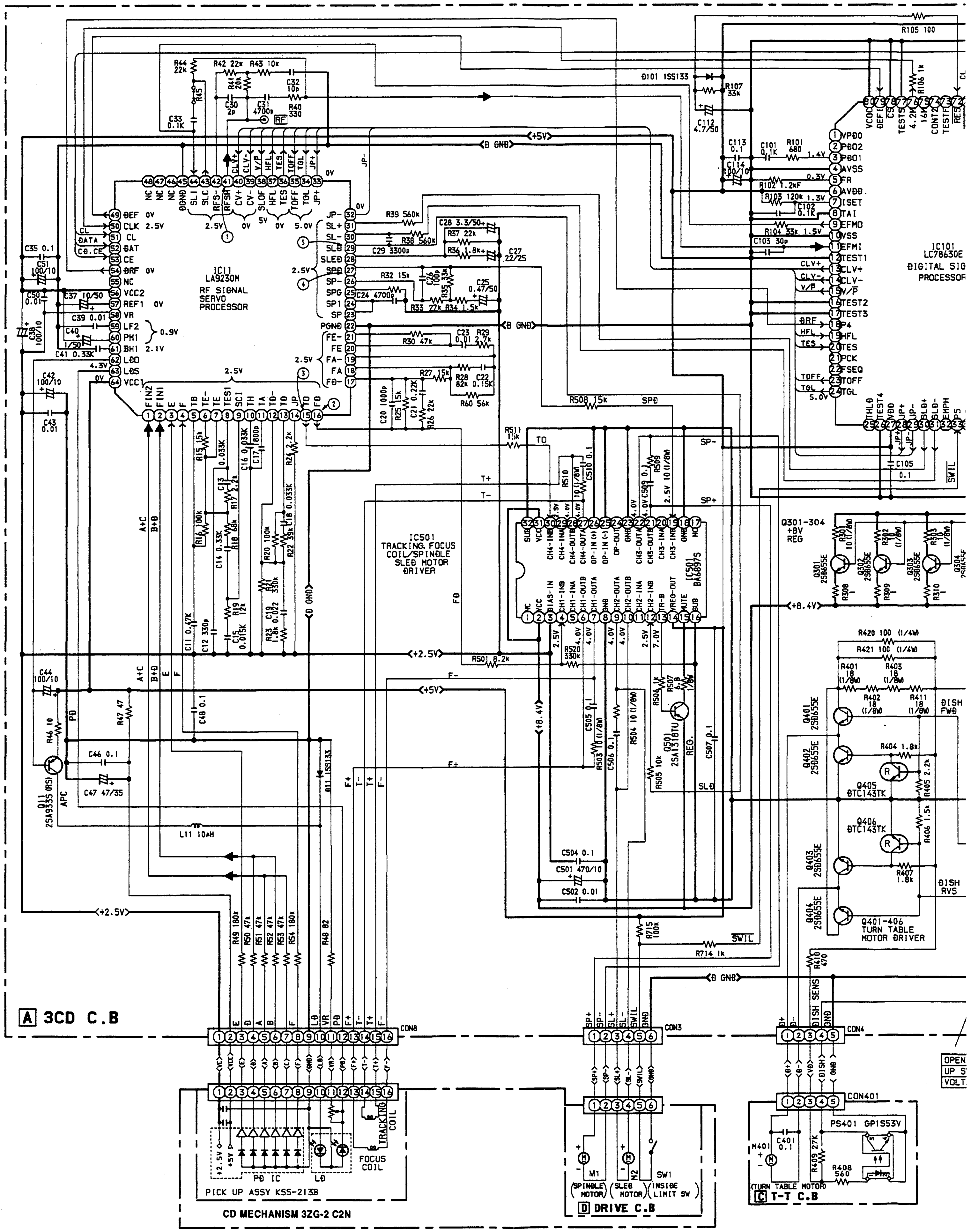

Vcc
Vref
②
⑧
⑥ Vs
⑦ OUT1
③ OUT2
REG.
CONTROL CIRCUIT
PROTECTOR CIRCUIT (TSD)
⑨ IN1
① IN2
⑤ GND

INPUT		OUTPUT		MODE
IN1	IN2	OUT1	OUT2	
0	0	∞	∞	STOP
1	0	H	L	CW
0	1	L	H	CCW
1	1	L	L	BRAKE

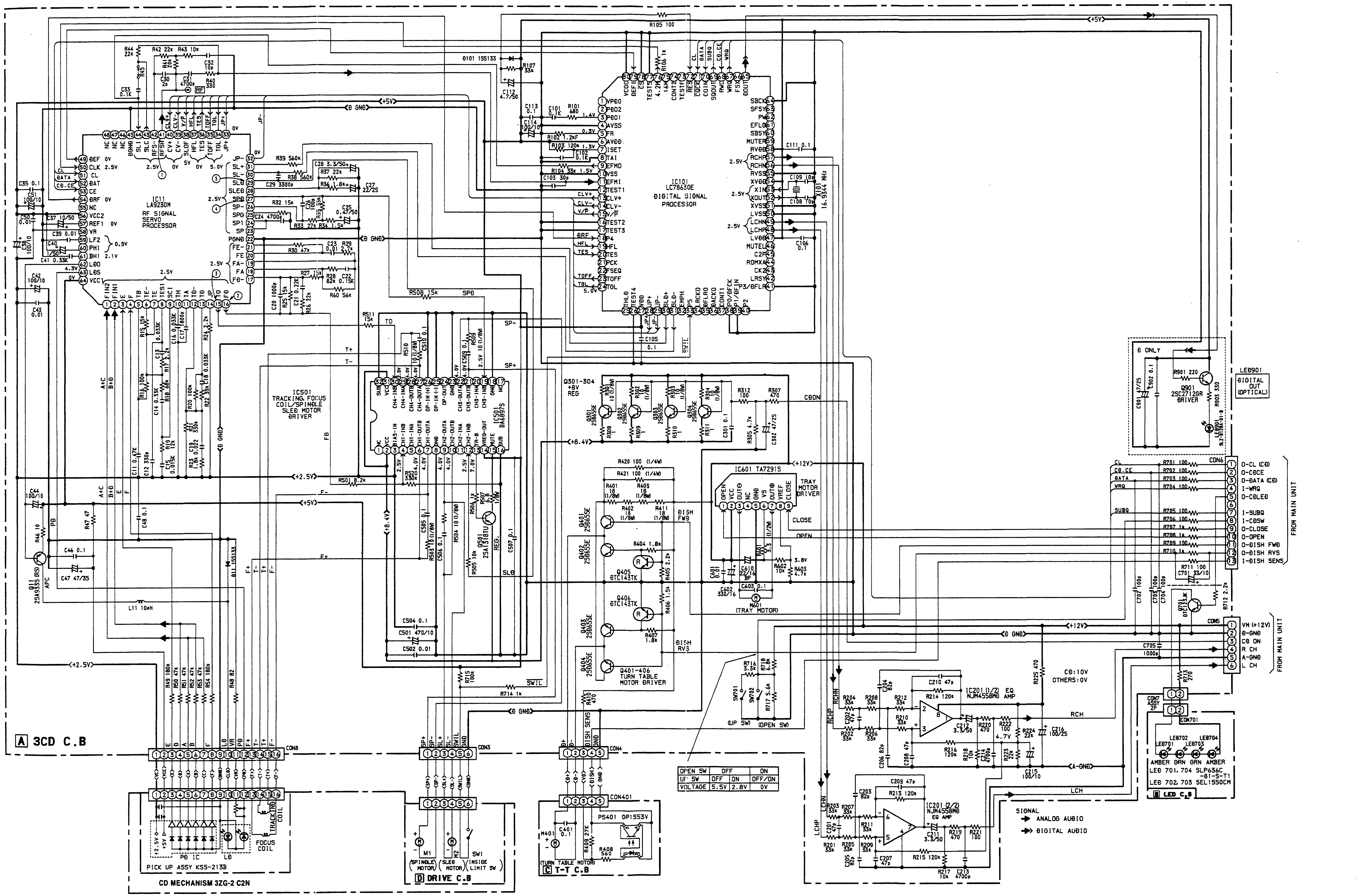
∞ : HI IMPEDANCE

NOTE : INPUT "H" ACTIVE

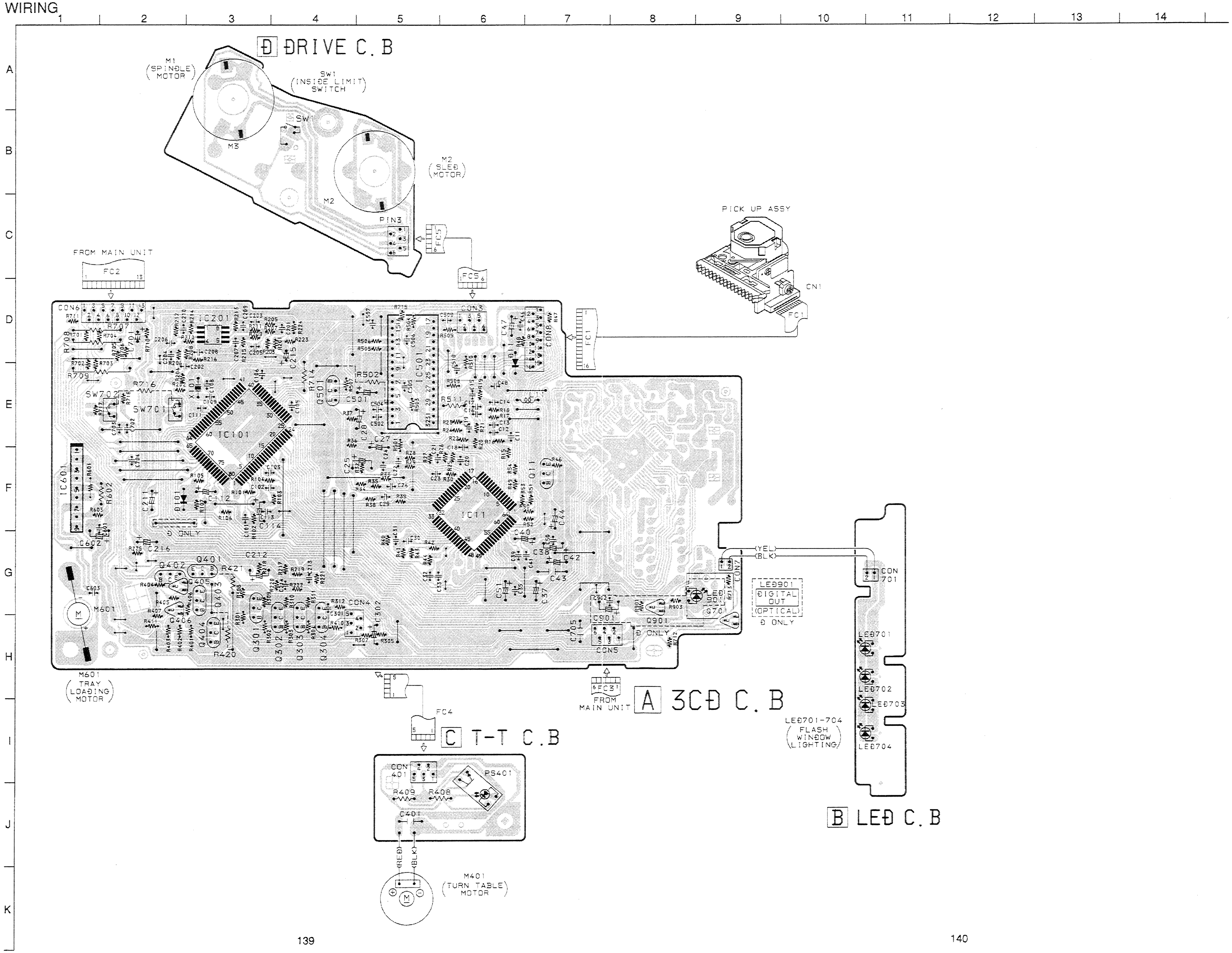
SCHEMATIC DIAGRAM


IC11
LA9230M
RF SIGNAL
SERVO
PROCESSOR
IC101
LC78630E
DIGITAL SIG
PROCESSOR
IC501
TRACKING, FOCUS
COIL/SPINDLE
SLED MOTOR
DRIVER
IC501
BA6897S
Q301-304
+8V
REG
Q401-406
TURN TABLE
MOTOR DRIVER
A 3CD C.B
CON8
CON3
CON4
CON401
PICK UP ASSY KSS-213B
FOCUS COIL
TRACKING COIL
CD MECHANISM 3ZG-2 C2N
M1
M2
SW1
SPINDLE MOTOR
SLED MOTOR
INSIDE LIMIT SW
D DRIVE C.B
PS401 GP1S53V
TURN TABLE MOTOR
C T-T C.B
OPEN
UP S
VOLT

SCHEMATIC DIAGRAM


IC11 LA9230M RF SIGNAL SERVO PROCESSOR
IC101 LC78630E DIGITAL SIGNAL PROCESSOR
IC501 TRACKING, FOCUS COIL/SPINDLE SLED MOTOR DRIVER
IC501 BA6897S
IC601 TA7291S TRAY MOTOR DRIVER
Q301-304 +8V REG
Q401-406 TURN TABLE MOTOR DRIVER
Q501 2SA1318TU REG.
Q11 2SA933S (RS) APC
Q901 2SC2712GR DRIVER
LED901 DIGITAL OUT (OPTICAL)
D ONLY
IC201 (1/2) NJM4558MD EQ AMP
IC201 (2/2) NJM4558MD EQ AMP
X101 16.9344 MHz
D101 1SS133
D11 1SS133
L11 10µH
M401 (TRAY MOTOR)
CD:10V OTHERS:0V
CON6
O-CL (CD)
O-CDCE
O-DATA (CD)
I-WRQ
O-CDLED
I-SUBQ
I-CDSW
O-CLOSE
O-OPEN
O-DISH FWD
O-DISH RVS
I-DISH SENS
FROM MAIN UNIT
CON5
VM (+12V)
D-GND
CD ON
R CH
A-GND
L CH
FROM MAIN UNIT
CON7 ASSY 2P
CON701
LED701 LED702 LED703 LED704
AMBER GRN GRN AMBER
LED 701, 704 SLP636C -81-S-T1
LED 702, 703 SEL1550CM
B LED C.B
A 3CD C.B
CON8
CON3
CON4
CON401
PICK UP ASSY KSS-213B
PD IC
LD
FOCUS COIL
TRACKING COIL
CD MECHANISM 3ZG-2 C2N
M1 (SPINDLE MOTOR)
M2 (SLED MOTOR)
SW1 (INSIDE LIMIT SW)
D DRIVE C.B
M401 (TURN TABLE MOTOR)
PS401 GP1S53V
C T-T C.B
SW701 (UP SW)
SW702 (OPEN SW)
OPEN SW | OFF | ON
UP SW | OFF | ON | OFF/ON
VOLTAGE | 5.5V | 2.8V | 0V
SIGNAL
ANALOG AUDIO
DIGITAL AUDIO
<+5V>
<+12V>
<+2.5V>
<+8.4V>
<D GND>
<A-GND>
RCH
LCH
CDON
CLOSE
OPEN
DISH FWD
DISH RVS
SWIL
SP+
SP-
SLD

WIRING


1
2
3
4
5
6
7
8
9
10
11
12
13
14
A
B
C
D
E
F
G
H
I
J
K
D DRIVE C.B
M1 (SPINDLE MOTOR)
SW1 (INSIDE LIMIT SWITCH)
M2 (SLED MOTOR)
M3
PIN3
FC5
PICK UP ASSY
CN1
FC1
FROM MAIN UNIT
FC2
CON6
CON3
CON8
IC201
IC101
IC501
IC11
IC601
SW702
SW701
Q501
Q401
Q402
Q405
Q403
Q404
Q406
Q301
Q302
Q303
Q304
Q11
Q701
Q901
CON4
CON5
CON7
D ONLY
M601
M601 (TRAY LOADING MOTOR)
FC3 FROM MAIN UNIT
A 3CD C.B
(YEL)
(BLK)
CON 701
LED901 DIGITAL OUT (OPTICAL) D ONLY
LED701
LED702
LED703
LED704
LED701-704 (FLASH WINDOW LIGHTING)
B LED C.B
FC4
C T-T C.B
CON 401
PS401
R409
R408
C401
(RED)
(BLK)
M401 (TURN TABLE MOTOR)

IC DESCRIPTION

IC, LC78630E

Pin No.	Pin Name	I/O	Description
1	VPDO	O	Vari-pitch PLL charge pump output pin. This pin must be open when not used.
2	PDO2	O	Bit clock playback PLL charge pump output pin during 2 times and 4 times speed. This pin must be open when not used.
3	PDO1	O	Bit clock playback PLL charge pump output pin during normal speed.
4	AVSS	—	Analog system GND. Normally 0V.
5	FR	I	An external resistor to set built-in VCO frequency range is connected to this pin.
6	AVDD	—	Analog system GND.
7	ISET	I	An external resistor set PD01 and PD02 output current is connected to this pin.
8	TAI	I	Test input pin with built-in pull-down resistor.
9	EFMO	O	EFM signal output pin.
10	VSS	—	Digital system GND. Normally 0V.
11	EFMI	I	EFM signal input pin.
12	TEST1	I	Test input pin with built-in pull-down resistor.
13	CLV+	O	Spindle servo control output pin. Acceleration when CLV+ is "H".
14	CLV-	O	Deceleration when CLV- is "H".
15	V/$\overline{\text{P}}$	O	Rough servo/phase control automatic selection monitoring output pin. Rough servo at "H". Phase control mode at "L".
16, 17	TEST2, TEST3	I	Test input pin with built-in pull-down resistor.
18	P4	I/O	Input/output port.
19	HFL	I	Tracking detection signal input pin. Schmitt input.
20	TES	I	Tracking error signal input pin. Schmitt input.
21	PCK	O	EFM data playback bit clock monitoring pin. 4.3218 MHz when phase is locked during normal speed playback.
22	FSEQ	O	Sync signal detection output pin. When the sync signal detected from the EFM signal agrees with the internally generated sync signal, "H" output.
23	TOFF	O	Tracking OFF output pin.
24	TGL	O	Tracking gain selector output pin. Gain is increased at "L".
25	THLD	O	Tracking hold output pin.
26	TEST4	I	Test input pin with built-in pull-down resistor.
27	VDD	—	Digital system GND.
28, 29	JP+, JP-	O	Tracking jump output pin. JP+ "H" occurs at acceleration during jump toward outside or decelerator toward inside. JP- "H" occurs at acceleration during jump toward inside or deceleration toward outside.
30, 31	SLD+, SLD-	O	Sled output pin. Four different level can be set using commands.
32	EMPH	O	Emphasis monitoring output. "H" indicates that emphasis disc is being played back.
33	P5	I/O	Input/output.
34	LRCKO	O	Digital filter output. LR clock output pin.
35	DFLRO	O	Digital filter output. LR data output pin. DF is turned OFF with the DFOFF command.
36	DACKO	O	Digital filter output. Bit clock output pin.
37	CONT1	O	Output port.
38	P0/DFCK	I/O	Input/output port. The DF bit clock input pin during the anti-shock mode.
39	P1/DFIN	I/O	Input/output port. The DF data input pin during the anti-shock mode.
40	P2	I/O	Input/output port. Deemphasis filter ON/OFF selection input pin during the anti-shock mode. Deemphasis filter ON at "H".
41	P3/DFLR	I/O	Input/output port. The DF LR clock input pin during the anti-shock mode.
42	LRSY	O	For ROMXA • LR clock output pin.
43	CK2	O	For ROMXA • Bit clock output pin. Polarity inversion by the CK2CON command.
44	ROMXA	O	For ROMXA • Interpolation data output pin. The un-interpolated data is output with the ROMXA command.
45	C2F	O	For ROMXA • C2 flat output pin.
46	MUTEL	O	For 1-bit DAC • L-channel mute output pin.
47	LVDD	—	For 1-bit DAC • L-channel power supply.
48	LCHP	O	For 1-bit DAC • L-channel P output pin.
49	LCHN	O	For 1-bit DAC • L-channel N output pin.
50	LVSS	—	For 1-bit DAC • L-channel GND. Normally 0 V.
51	XVSS	—	Crystal oscillator GND. Normally 0 V.
52	XOUT	O	An external 16.9344 MHz crystal oscillator is connected to this pin.
53	XIN	I	33.8688 MHz crystal oscillator is connected during 4 time speed playback.
54	XVDD	—	Crystal oscillator GND.
55	RVSS	—	For 1-bit DAC • R-channel GND. Normally 0 V.
56	RCHN	O	For 1-bit DAC • R-channel N output pin.
57	RCHP	O	For 1-bit DAC • R-channel P output pin.
58	RVDD	—	For 1-bit DAC • R-channel power supply.
59	MUTER	O	For 1-bit DAC • R-channel mute output pin.
60	SBSY	O	Subcode block sync signal output pin.
61	EFLG	O	C1 and C2 error correction monitoring pin.
62	PW	O	ubcode P, Q, R, S, T, U, V and W output pin.
63	SFSY	O	Subcode frame sync signal output pin. The level falls down when the subcode is in standby.
64	SBCK	I	Subcode read clock input pin. Schmitt input. This pin must be connected GND when not used.
65	DOUT	O	Digital output pin.
66	FSX	O	7.35 kHz sync signal divided from the crystal oscillator is output to this pin.
67	WRQ	O	Subcode Q output standby output pin.
68	RWC	I	Read/write control input pin.
69	SQOUT	O	Subcode Q output pin.
70	COIN	I	Microprocessor command input pin.
71	$\overline{\text{CQCK}}$	I	Command input read clock or subcode read clock input from SQOUT. Schmitt input.
72	$\overline{\text{RES}}$	I	Chip reset input pin. This pin goes to "L" once when the main power is turned on.
73	TESTF	O	Test output pin.
74	CONT2	O	Output port.

Pin No.	Pin Name	I/O	Description
75	16M	O	16.9344 MHz crystal output pin. 33.8688 MHz is output during 4 times speed playback.
76	4.2M	O	4.2336 MHz output pin.
77	TEST5	I	Test input pin with built-in pull-down resistor.
78	$\overline{CS}$	I	Chip select input pin with built-in pull-down resistor.
79	DEFI	I	Defect detection signal input pin. This pin must be connected GND when not used.
80	VCOC	I	Vari-pitch VCO control input pin. This pin must be connected GND when not used.

IC, LA9230M

Pin No.	Pin Name	I/O	Description
1	FIN2	I	Photo diode of pickup is connected to this pin. This signal is added to the FIN1 pin signal to produce the RF signal and subtracted to produce the FE signal.
2	FIN1	I	Photo diode of pickup is connected to this pin.
3	E	I	Photo diode of pickup is connected to this pin. This signal is subtracted from the F pin signal to produce the FE signal.
4	F	I	Photo diode of pickup is connected to this pin.
5	TB	I	DC component of the TE signal is input to this pin.
6	TE-	I	The TE signal gain adjustment resistor is connected between this pin and the TE pin.
7	TE	O	The TE signal output pin.
8	TESI	I	TES (Track Error Sense) comparator input pin. The TE signal is input after passing through band-pass filter.
9	SCI	I	Shock sense input signal is connected to this pin.
10	TH	I	Tracking gain time constant setting pin.
11	TA	O	TA amplifier output pin.
12	TD-	I	An external tracking phase compensation constant is connected between the TD and VR pins.
13	TD	I	An external tracking phase compensation setting pin.
14	JP	I	Tracking jump signal (kick pulse) amplitude setting pin.
15	TO	O	Tracking control signal output pin.
16	FD	O	Focusing control signal output pin.
17	FD-	I	A focusing phase compensation constant is connected between the FD and FA pins.
18	FA	I	A focusing phase compensation constant is connected between the FD- and FA- pins.
19	FA-	I	A focusing phase compensation constant is connected between the FA and FE pins.
20	FE	O	FE signal output pin.
21	FE-	I	An external FE signal gain setting resistor is connected between the TE and this pins.
22	AGND	—	Analog signal GND.
23	SP	O	Single-ended output of the CV+ and CV- pin input signal.
24	SPI	I	Spindle amplifier input.
25	SPG	I	An external spindle gain in 12 cm mode setting resistor is connected to this pin.
26	SP-	I	An external spindle phase compensation constant together with the SPD pin, is connected to this pin.
27	SPD	O	Spindle control signal output pin.
28	SLEQ	I	Sled phase compensation constant is connected to this pin.
29	SLD	O	Sled control signal output pin.
30, 31	SL-, SL+	I	Sled advance signal input pin from microprocessor.
32, 33	JP-, JP+	I	Tracking jump signal input pin from DSP.
34	TGL	I	Tracking gain control signal input pin from DSP. Gain low when TGL = "H".
35	TOFF	I	Tracking off control signal input pin from DSP. Tracking off when TGL = "H".
36	TES	O	The TES signal is output from this pin to DSP.
37	HFL	I	The (HIGH FREQUENCY LEVEL) is used to judge whether the main beam is positioned above the bits or mirror.

Pin No.	Pin Name	I/O	Description
38	SLOF	I	Sled servo off control input pin.
39, 40	CV-, CV+	I	CLV error signal input pin from DSP.
41	RFSM	O	RF output pin.
42	RFS-	I	RF gain setting and 3T compensation constant setting pin together with RFSM pin.
43	SLC	O	The (SLICE LEVEL CONTROL) is the signal which control the data slice level of the RF waveform with DSP. The (SLICE LEVEL CONTROL) is from this pin.
44	SLI	I	The input signal which controls the data slice level with DSP, is connected to this pin.
45	DGND	—	Digital system GND.
46	NC [FSC]	—	No connection. (Output pin for focus search smoothing capacity.)
47, 48	NC	—	No connection.
49	DEF	O	Disc defect detection output pin.
50	CLK	I	Reference clock input pin. The DSP 4.23 MHz is input to this pin.
51	CL	I	Microprocessor command clock input pin.
52	DAT	I	Microprocessor command data input pin.
53	CE	I	Microprocessor command chip enable input pin.
54	DRF	O	(DETECT RF) RF level detection output.
55	NC	—	No connection.
56	VCC2	—	Servo system and digital system Vcc pin.
57	REFI	I	A bypass capacitor for reference voltage is connected to this pin.
58	VR	O	Reference voltage output pin.
59	LF2	I	An external disc defect detection constant is connected to this pin.
60	PH1	I	An external RF signal peak holding capacitor is connected to this pin.
61	BH1	I	An external RF signal bottom holding capacitor is connected to this pin.
62	LDD	O	APC circuit output pin.
63	LDS	I	APC circuit input pin.
64	VCC1	—	RF system Vcc pin.

TEST MODE

1. How to Activate CD Test Mode
   Insert the AC plug while pressing the function CD button.
   All FL display tubes will light up, and the test mode will be activated.

2. How to Cancel CD Test Mode
   Either one of the following operations will cancel the CD test mode.
   - Press the function button. (except CD function button) • Press the power switch button. • Disconnect the AC plug

3. CD Test Mode Functions
   When test mode is activated, the following mode functions from No.1 to No.5 can be used by pressing the operation keys.

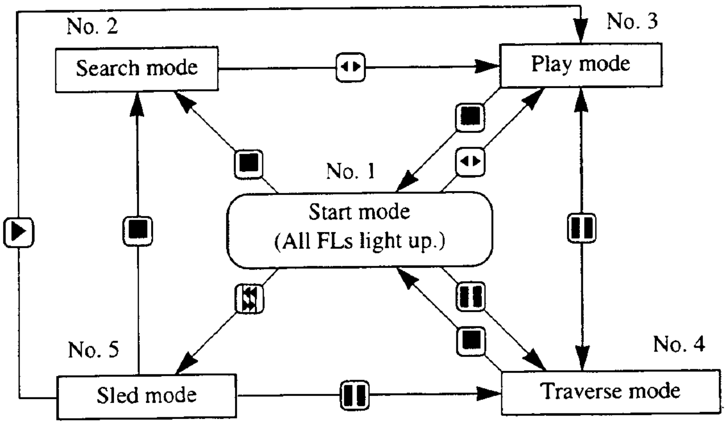
Mode/No.	Operation	FL display	Operation	Contents
Start mode No.1	Activation	All lamps light	• Test mode is activated. • CD block power is ON.	• FL display check (All displays light.)
Search mode No.2	■ key	CD--	• Laser diode turns always ON. • Continual focus search (The pickup lens repeats the full-swing up-down motion.) * Avoid continual searches that last for more than 10 minutes. * NOTE 1	• APC circuit check • Laser current measurement (Laser current control. Across a resistor connected between emitter and GND.) FOCUS SERVO • Check focus search waveform • Check focus error waveform (FOK/FZC are not monitored in the search mode)
Play mode No.3	◀▶ key	CD 1	• Normal playback • Focus search is continued if TOC cannot be read. * NOTE 1	FOCUS SERVO/TRACKING SERVO CLV SERVO/SLED SERVO Check DRF
Traverse mode No.4	❚❚ key	CD 1	• During normal disc playback Press once; tracking servo OFF Press twice; tracking servo ON * NOTE 2	TRACKING SERVO ON/OFF Tracking balance (traverse) check
Sled mode No.5	⏮ key ⏭	All lamps light	• Pickup moves to the outermost track • Pickup moves to the innermost track * NOTE 3 (During playback, machine operates normally.)	SLED SERVO Check SLED mechanism operation

* NOTE 1: There are cases when the tracking servo cannot be locked owing to the protection circuit being operated when heat builds up in the driver IC if the focus search is operated continually for more than 10 minutes. In these cases the power supply should be switched off for 10 minutes until heat has been reduced and then re-started.

* NOTE 2: Do not press the ⏮ or ⏭ keys when the machine is in the ❚❚ status is active. If they are pressed, playback will not be possible after the ❚❚ status has been canceled. If the ⏮ or ⏭ keys are pressed in the ❚❚ status, press the ■ key and return to the start mode (No.1).

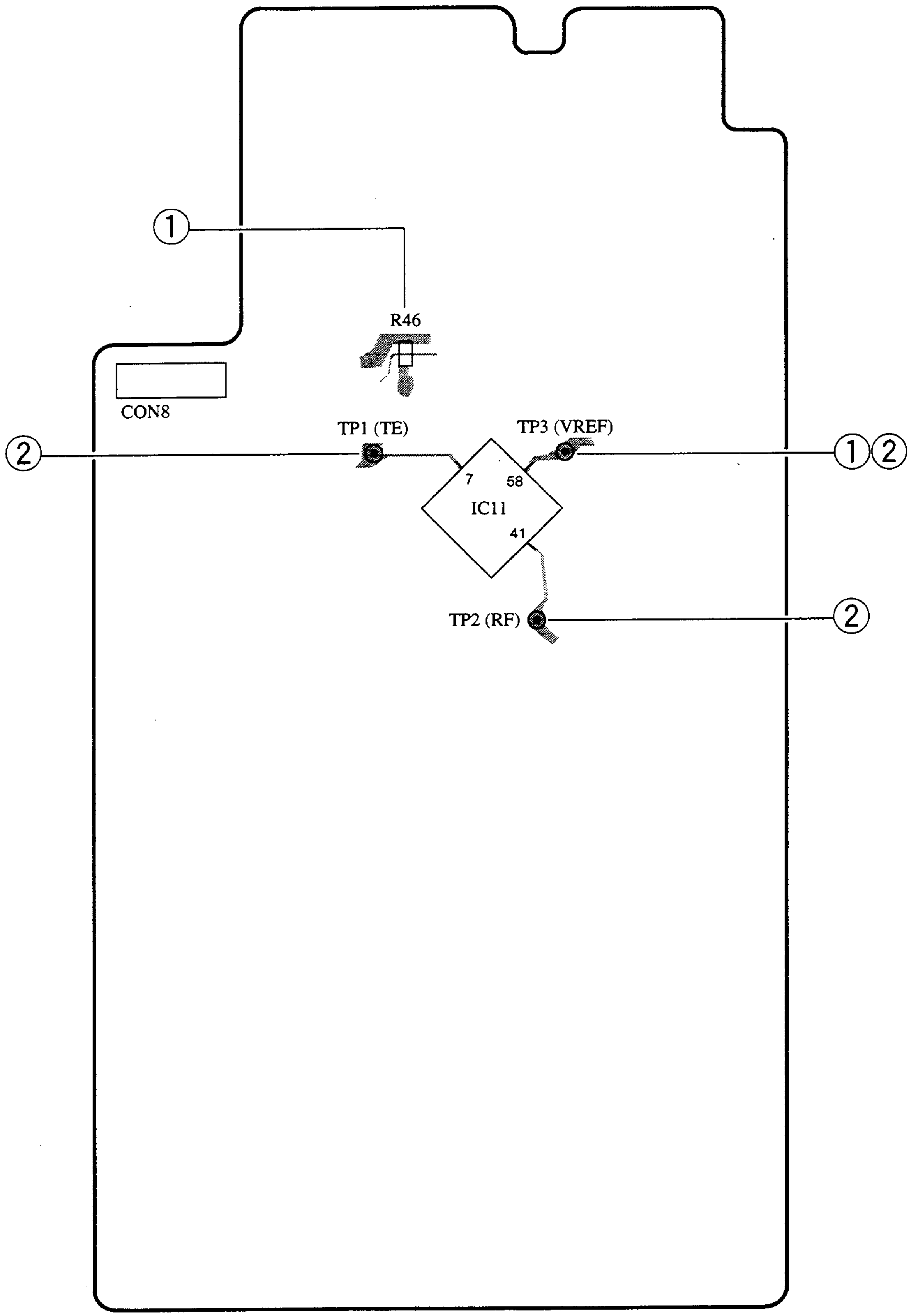
* NOTE 3: When pressing the ⏮ or ⏭ keys, take care to avoid damage to the gears. Because the sled motor is activated when the ⏮ or ⏭ keys are pressed, even when the pick-up is at the outermost or innermost track.

4. Operation Outline
   The operation of each mode is carried out in the direction of the arrows from the start mode as indicated in the following illustration.



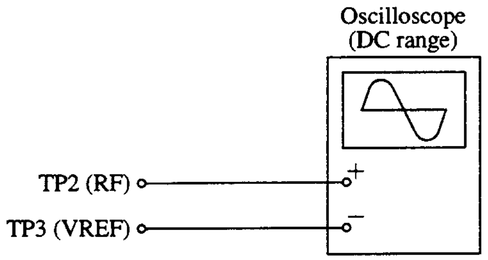
If the DISC DIRECT PLAY button is pressed, the machine performs the same operation as the PLAY button is pressed as shown. If the tray is opened by pressing OPEN/CLOSE button during Play mode or Traverse mode, the machine returns to the Start mode.

A 3CD C.B (PATTERN SIDE)

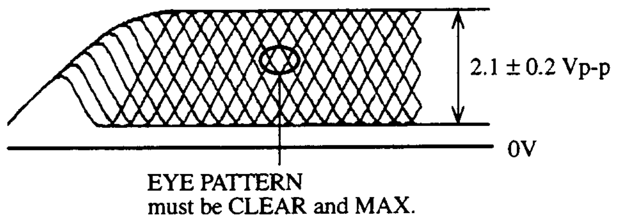

①
R46
CON8
TP1 (TE)
TP3 (VREF)
②
①②
7
58
IC11
41
TP2 (RF)
②

Note:
- Connect a probe (10: 1) of the oscilloscope or the frequency counter to a test point.
- During adjustment, connect (⊖) pin of an oscilloscope to TP3 (VREF).

1. RF waveform Check

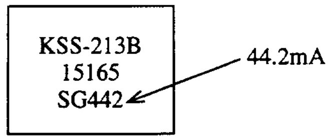

Oscilloscope
(DC range)
TP2 (RF)
TP3 (VREF)
+
−

1) Connect an oscilloscope to test points TP2 (RF) and TP3 (VREF).
2) Turn on the power switch.
3) Insert test disc TCD-782 (YEDS-18) and play back the second program.
4) Confirm that the waveform at oscilloscope has amplitude of 2.1 Vp-p, and clear wedge area in its center.


2.1 ± 0.2 Vp-p
0V
EYE PATTERN
must be CLEAR and MAX.

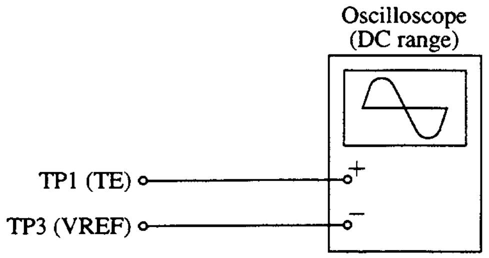
VOLT/DIV: 50mV
TIME/DIV: 0.5μS

Note: The current of the laser signal can be checked with the voltages on both sides of R46 (voltage across 10Ω). The difference for the specified value shown on the label must be within ± 6.0mA.

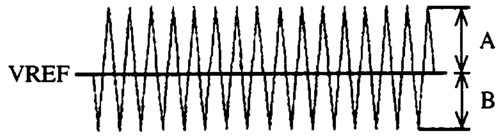

KSS-213B
15165
SG442
44.2mA

$$\text{Laser current Iop} = \frac{\text{Voltage across R46}}{10\Omega}$$

2. Tracking Balance Check


Oscilloscope
(DC range)
TP1 (TE)
TP3 (VREF)
+
−

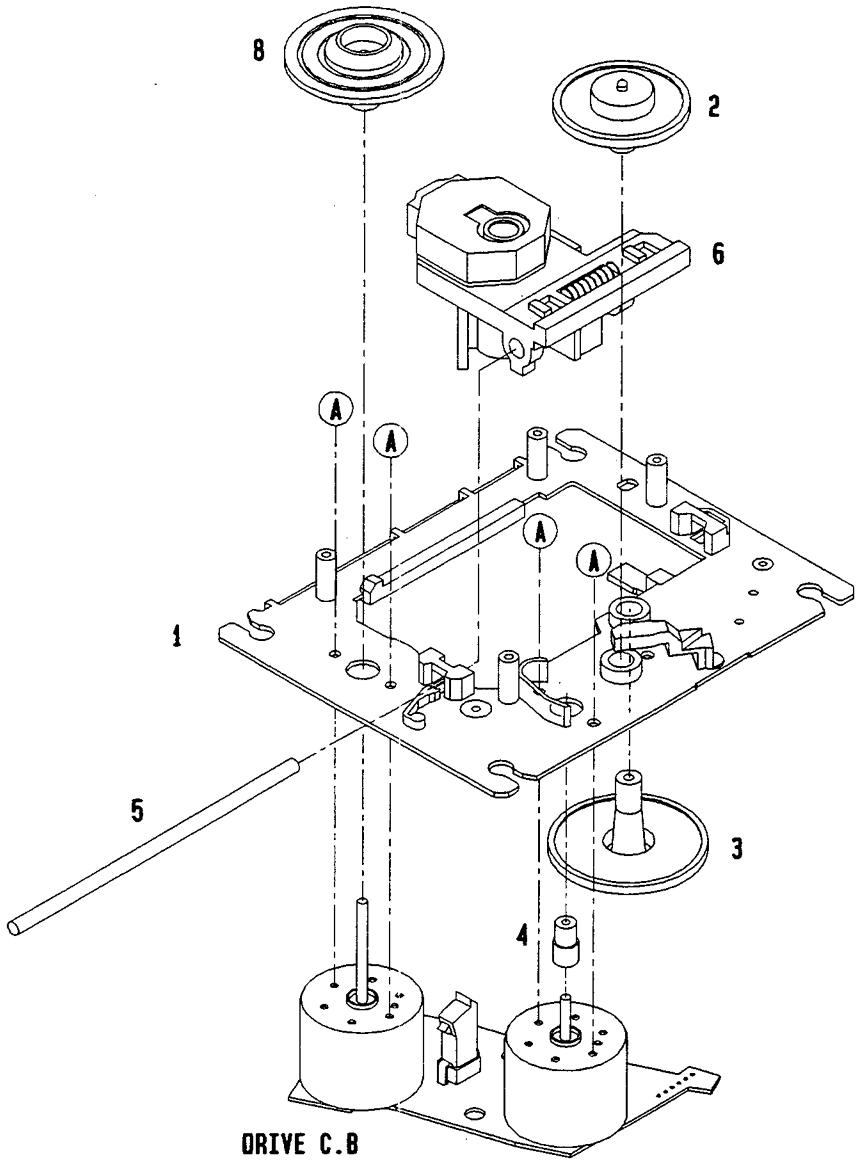
1) Connect an oscilloscope to test points TP1 (TE) and TP3 (VREF).
2) Start up the CD test mode.
3) Insert the test disc TCD-782(YEDS-18) and enter the traverse mode of the CD test mode.
4) Confirm that the traverse waveform on an oscilloscope is vertically symmetrical as shown in the figure below.
5) After confirming the waveform, release the CD test mode.



A=B

VOLT/DIV: 20mV
TIME/DIV: 1mS

CD MECHANISM EXPLODED VIEW 1 ／ 1 (3ZG-2 C2N <Z>)



CD MECHANISM PARTS LIST 1 ／ 1 (3ZG-2 C2N <Z>)

DESCRIPTIONで判断できない物は "REFERENCE NAME LIST" を参照してください。
If can't understand for Description please kindly refer to "REFERENCE NAME LIST".

REF. NO	PART NO.	カンリ NO.	DESCRIPTION	REF. NO	PART NO.	カンリ NO.	DESCRIPTION
1	83-ZG2-202-71K		O-SERT S ASSY,S	6	87-070-445-010		PICK-UP,KSS-213B
2	83-ZG2-204-419		GEAR,A	8	83-ZG2-233-019		TURN TABLE,A5
3	83-ZG2-205-219		GEAR,B	A	87-261-032-219		SCREW V+2-3
4	83-ZG2-220-01K		GEAR MOTOR 2				
5	83-ZG2-207-119		SHAFT,SLIDE				

USE MODEL LIST

CX-NAV70 (NSX-AV70)
CX-NAV700 (NSX-AV700)
CX-NAV71 (NSX-AV71)
CX-NAV80 (NSX-AV80)
CX-NAV800 (NSX-AV800)
CX-NAV90 (NSX-AV90)
CX-NAV900 (NSX-AV900)
CX-NK300 (NSX-K300)
CX-NK700 (NSX-K700)
CX-NK77 (NSX-K77)
CX-NK80 (NSX-K80)
CX-NK90 (NSX-K90)
CX-NV300 (NSX-V300)
CX-NV3000 (NSX-V3000)
CX-NV3001 (NSX-V3001)
CX-NV390 (NSX-V390)
CX-NV500 (NSX-V500)
CX-NV700 (NSX-V700)
CX-NV705 (NSX-V705)
CX-NV710 (NSX-V710)
CX-NV715 (NSX-V715)
CX-NV720 (NSX-V720)
CX-NV770 (NSX-V770)
CX-NV800 (NSX-V800)
CX-NV8000 (NSX-V8000)
CX-NV8080 (NSX-V8080)
CX-NV820 (NSX-V820)
CX-NV900 (NSX-V900)
CX-NV9000 (NSX-V9000)
CX-NV9090 (NSX-V9090)
CX-NV915 (NSX-V915)
CX-NV929 (NSX-V929)
FD-NAKH8 (NSX-AKH8)
FD-NH8 (NSX-AVH8)
FD-NH8 (NSX-AVH8)
FD-NH80 (NSX-AVH80)
FD-NH9 (NSX-AVH9)
FD-NH9 (NSX-AVH9)
FD-NH90 (NSX-AVH90)
FD-SNAKH8 (NSX-AKH8)
FD-SNH9 (NSX-AVH9)

REFERENCE NAME LIST

ELECTRICAL SECTION

DESCRIPTION	REFERENCE NAME
ANT	ANTENNAS
C-	CHIP
C-CAP	CAP, CHIP
C-CAP TN	CAP, CHIP TANTALUM
C-COIL	COIL, CHIP
C-DI	DIODE, CHIP
C-DIODE	DIODE, CHIP
C-FET	FET, CHIP
C-FOTR	FILTER, CHIP
C-JACK	JACK, CHIP
C-LED	LED, CHIP
C-RES	RES, CHIP
C-SFR	SFR, CHIP
C-SLIDE SW	SLIDE SWITCH, CHIP
C-SW	SWITCH, CHIP
C-TR	TRANSISTOR, CHIP
C-VR	VOLUME, CHIP
C-ZENER	ZENER, CHIP
CAP, CER	CAP, CERA-SOL
CAP, E	CAP, ELECT
CAP, M/F	CAP, FILM
CAP, TC	CAP, CERA-SOL
CAP, TC-U	CAP, CERA-SOL SS
CAP, TN	CAP, TANTALUM
CERA FIL	FILTER, CERAMIC
CF	FILTER, CERAMIC
DL	DELAY LINE
E/CAP	CAP, ELECT
FILT	FILTER
FLTR	FILTER
FUSE RES	RES, FUSE
MOT	MOTOR
P-DIODE	PHOTO DIODE
P-SNSR	PHOTO SENSER
P-TR	PHOTO TRANSISTOR
POLY VARI	VARIABLE CAPACITOR
PPCAP	CAP, PP
PT	POWER TRANSFORMER
PTR, RES	PTR, MELF
RC	REMOTE CONTROLLER
RES NF	RES, NON-FLAMMABLE
RESO	RESONATOR
SHLD	SHIELD
SOL	SOLENOID
SPKR	SPEAKER
SW, LVR	SWITCH, LEVER
SW, RTRY	SWITCH, ROTARY
SW, SL	SWITCH, SLIDE
TC CAP	CAP, CERA-SOL
THMS	THERMISTOR
TR	TRANSISTOR
TRIMMER	CAP, TRIMMER
TUN-CAP	VARIABLE CAPACITOR
VIB, CER	RESONATOR, CERAMIC
VIB, XTAL	RESONATOR, CRYSTAL
VR	VOLUME
ZENER	DIODE, ZENER
サージサプレッサ	SERGESUPPRESSOR
セラコン	CAP,CERA

MECHANICAL SECTION

DESCRIPTION	REFERENCE NAME
ADHESHIVE	SHEET ADHESHIVE
AZ	AZIMUTH
BAR-ANT	BAR-ANTENNA
BAT	BATTERY
BATT	BATTERY
BRG	BEARING
BTN	BUTTON
CAB	CABINET
CASS	CASSETTE
CHAS	CHASSIS
CLR	COLLAR
CONT	CONTROL
CRSR	CURSOR
CU	CUSHION
CUSH	CUSHION
DIR	DIRECTION
DUBB	DUBBING
FL	FRONT LOADING
FLY-WHL	FLYWHEEL
FR	FRONT
FUN	FUNCTION
G-CU	G-CUSHION
HDL	HANDOL
HIMERON	CLOTH
HINGE, BAT	HINGE, BATTERY
HLDR	HOLDER
HT-SINK	HEAT SINK
IB	INSTRUCTION BOOKLET
IDLE	IDLER
IND, L-R	INDICATOR, L-R
KEY, CONT	KEY, CONTROL
KEY, PRGM	KEY, PROGRAM
KNOB, SL	KNOB, SLIDE
LBL	LABEL
LID, BATT	LID, BATTERY
LID, CASS	LID, CASSETTE
LVR	LEVER
P-SP	P-SPRING
PANEL, CONT	PANEL, CONTROL
PANEL, FR	PANEL, FRONT
PRGM	PROGRAM
PULLY, LOAD MO	PULLY, LOAD MOTOR
RBN	RIBBON
S-	SPECIAL
SEG	SEGMENT
SH	SHEET
SHLD-SH	SHIELD-SHEET
SL	SLIDE
SP	SPRING
SP-SCREW	SPECIAL-SCREW
SPACER, BAT	SPACER, BATTERY
SPR	SPRING
SPR-P	P-SPRING
SPR-PC-PUSH	P-SPRING, C-PUSH
T-SP	T-SPRING
TERM	TERMINAL
TRIG	TRIGGER
TUN	TUNING
VOL	VOLUME
W	WASHER
WHL	WHEEL
WORM-WHL	WORM-WHEEL
ジグアーム	ARM,SHAFT
ジグガイド	GUIDE,SHAFT
ストラップ	STRAP
トクナベ	S-SCREW
ヒンジ	HINGE
ヒンジビス	S-SCREW
ビスセレート	SCREW,SERRART